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> When I look back on the processes of history, when I survey the genesis of America, I see this written over every page: that the nations are renewed from the bottom, not from the top; that the genius which springs up from the ranks of unknown men is the genius which renews the youth and energy of the people.
>
> —Woodrow Wilson

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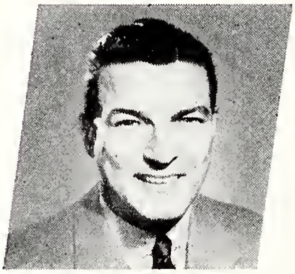

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SEARLE

Tendon and Nerve Injuries of the Hand*

H. MINOR NICHOLS, M.D.
Portland, Oregon

ANATOMY, PATHOLOGY AND PHYSIOLOGY—TENDON INJURIES

Flexor Tendons: The tendons which flex the fingers and thumb originate as pinnate or bipinnate musculo-tendinous structures in the forearm. To move the fingers from full extension to full flexion requires a tendon excursion amounting to about 1½ inches in the hand, and with wrist motion 2½ inches in the forearm. This motion takes place without friction, the tendons being surrounded by loose areolar tissue in the forearm or palm, or are carried in tendon sheaths lined with mesothelium cells in the digits. The sheaths are strong enough to prevent bowing and fit the tendons perfectly. Swelling of the tendons from injury, either traumatic or surgical, will prevent sliding here. There are two tendons in the sheath of each finger—the sublimis and profundus, and one tendon—the long flexor—in the thumb. The sheaths extend from the metacarpophalangeal joint to the distal joint. Another sheath lies in the carpus beneath the transverse carpal ligament. Here, nine tendons and the median nerve are all contained in a common tunnel, separated by a few thin membranous bursae and some blood vessels, and areolar tissue.

The palm or the forearm are complicated anatomically as there are not only nine to eleven tendons but also nerves, blood vessels, lumbrical muscles, etc. In the forearm and palm the mobility of the tissues enables the tendons to slide better after repair than within the sheaths.

Extensor Tendons: The dorsum of the hand has only one short sheath about 1 inch long beneath the dorsal carpal ligament. The extensor tendons move in loose areolar tissue. Extensor tendons are flattened to ovoid in shape from the muscles to the metacarpophalangeal joints. From this area outward they change to complicated triangular membranous structure whose central portion receives the extensor tendons and whose lateral portion receives the tendons of the interosseus and lumbrical muscles. Each tendon receives its blood supply from mesentery-like structures in the forearm and hand, and in the sheaths themselves by two or three long spring-like vessels.

PATHOLOGY

When a tendon is cut the ends retract, bleeding occurs and, depending on whether blood supply is interfered with or not, a portion of tendon may actually undergo degeneration showing later alteration of its normal pattern and increased vascularity. After division, during healing, a pseudopod of soft gelatinous fibrous material grows out from the end of the tendon and attaches itself to whatever happens to be near. If the tendon ends are held together this structure initiates healing. When tendons heal they heal by callus which, after three weeks, gradually resolves. If this callus has become adherent to fixed structures such as bare bone or injured tendon sheath, this fixation is usually permanent. Surgical manipulation or motion before healing is complete increase adhesions.

PHYSIOLOGY

Movement of the fingers is accomplished by the synchronous action of the flexor tendons, extensor tendons and intrinsic muscles of the hand. While each of these functions can be tested separately, they overlap clinically and a separate motion must be performed against resistance for each test. The profundus tendons flex the distal joints of the fingers and the sublimis tendons the middle joints, and the long flexor of the thumb the distal joint of the thumb. Flexion at the metacarpophalangeal joints can be carried out actively by the long flexors or by the intrinsic muscles. These small muscles can also extend the interphalangeal joints but not the metacarpophalangeal joints.

DIAGNOSIS

Whenever a hand has been lacerated, tests should be carried out to ascertain the function of tendons and nerves. One should never fail to do this. In a baby the tests are often difficult to carry out. Here, the hand should be observed while the baby moves it and the effect on the digits of flexing or extending the wrist can be noted.

ANATOMY, PATHOLOGY AND DIAGNOSIS—NERVE INJURIES

The two important nerves of the hand are the median and ulnar which are found in the palm and volar surface of the forearm. The median nerve runs approximately down the middle of the forearm, under cover of the flexor sublimis muscles, to just above the wrist. Here, it is in a rather superficial position for a short distance before passing under the transverse carpal ligament with the flexor tendons. From here its motor branch goes to the thumb muscles and the sensory branches pass out to the sides of the thumb, index, long, and one-half the ring fingers. The ulnar nerve runs down the forearm under cover of the flexor carpi ulnaris along with the ulnar artery, then passes between the layers of the carpal ligament into the palm, thence its sensory branch goes to the little and one-half the ring fingers while the muscular branch passes deeply into the palm where it accompanies the deep palmar arch. The ulnar nerve, through its muscular branches, supplies all the small muscles of the hand excepting those producing opposition of the thumb. Loss of this nerve function makes the hand quite awkward for fine motions and picking up small objects as well as resulting in anesthesia of the little finger, half the ring finger, and a strip of the ulnar side of the palm about 1 inch wide. The median nerve supplies sensation to the rest of the front of the hand so when it is cut most of the hand is quite numb, and the thumb cannot be brought around to the opposed position because of paralysis of the small thenar muscles.

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*Presented before sixty-ninth annual session of the Mid-South Postgraduate Medical Assembly, February 11-14, 1958, Memphis, Tennessee.

Whenever either of these nerves is cut, the patient is usually aware of it immediately, although at times the doctor may miss it in his examination.

DIAGNOSIS

A simple test for intact small muscle enervation in the hand is to have the patient spread the fingers and bring them together again and abduct the thumb away from the plane of the palm. To test sensation one need only to prick the digits on each side with a pin. Some confusion may exist where one or several branches are cut or where the nerve is simply bruised. If the nerve is simply bruised it will ordinarily start to recover in a matter of a few days or weeks. By paying careful attention to the anatomy one should be able to diagnose the exact location of a lesion in any part of a nerve by a few simple tests.

PATHOLOGY

Nerve injury wrecks the hand, not only by loss of sensation and mobility, but by trophic changes as well. Paralyzed muscles atrophy and eventually undergo fibrous degeneration. The skin becomes dry and smooth, the joints stiffen and the bones lose calcium. Because of muscle imbalance the hand is thrown into odd positions such as the claw-hand of combined median and ulnar nerve palsy, the flat hand of median nerve palsy or the little finger contracture of the ulnar nerve palsy.

When a nerve is severed the peripheral part of the nerve swells as the axones degenerate. The proximal end forms a small tumor composed of scar tissue and neurones called a neuroma. When a nerve is repaired the fibers grow out at the rate of about 1 inch a month, the degree of regeneration being directly proportional to the suitability of the case and the skill of the operator.

TREATMENT

Nerve and tendon injuries commonly occur together in lacerations of the hand such as those caused by knife wounds, glass cuts, etc. These so-called "tidy" wounds are suitable cases for primary repair, and highly skilled repair of these injuries immediately after they occur will produce the best results. If circumstances are not favorable for a primary tendon or nerve suture, even if indicated, a careful skin closure will permit a secondary repair under ideal conditions without jeopardizing the end result. The secondary repair can be carried out either a few days or a few weeks later. I usually prefer to wait about thirty days, and observe the wound progress carefully as kindly healing is essential.

In the selection of cases for primary repair one should avoid crushing injuries, saw cuts, open fractures or wounds with ground-in dirt. A time limit of eight hours should not be exceeded. Favorable surroundings with good anesthesia and trained hospital personnel are essential.

The skin of the hand may be prepared as for any other operation but the wound itself should be protected from the action of strong antiseptics and preferably should only be flushed out with saline. Suitable drapes isolate the extremity and all operative room personnel should be masked. A previously applied blood pressure cuff on the upper arm is used routinely. Blood is expressed from the arm with an esmarch bandage and the cuff then inflated to 300 mm. of mercury. Small instruments of the type used by the plastic surgeon add greatly to the operator's finesse. Rough handling of tissues should be avoided and drying out prevented by saline applications. Proper exposure of the wound (usually necessary) involves an incision which is midlateral in the finger, paralleling the creases in the palm, or across the wrist and then up or down the border of the forearm. The original laceration should rarely be incised transversely. A routine exploration should follow to disclose what has been damaged. If the case is suitable, all tendons and nerves should be repaired at the same time as prolonged splinting incident to repeated surgery is not good for the hand. Tendons which are cleanly cut heal well with primary suture to give good results with proper selection of cases.

Tendons should be joined end to end using the least amount of non-irritating suture material which will satisfactorily maintain apposition. The tendon repair will only work if it lies in loose tissue, not against bare bone, damaged tendon sheath or questionable skin wounds. Tendons are usually more awkward to handle than nerves and, therefore, should be sutured first. Nerve rotation may produce malalignment of fibers and should be avoided The nerve ends are approximated using 6-0 silk, placing interrupted sutures in the perineurium; following this the nerve is injected with novacain or saline to align the fibrils. Before wound closure, one should attempt to cover the nerve or tendon repair by swinging a flap of areolar tissue over it. The tourniquet is then released and the bleeding points are tied. Wound closure is usually by single layer of interrupted non-absorbable sutures in the skin only. Drainage is rarely necessary. The wound is dressed with a single layer of grease gauze and mild compression applied with kerlex and sheet-wadding. A plaster splint is applied to keep the repaired tendons and nerves relaxed. This means flexion of the wrist for structures on the volar surface, and extension of the wrist and metacarpophalangeal joints for structures on the dorsum. Post-operatively, the hand should be kept elevated and the patient should be kept in the hospital for at least a day or so. If kindly healing occurs the wound need not be inspected for a week. All tendon repairs (and most nerves) need to be splinted for three weeks to a month.

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Address and Report of the President

NINETIETH ANNUAL SESSION, MISSISSIPPI STATE MEDICAL ASSOCIATION

HOWARD A. NELSON, M. D.
Greenwood, Miss.

Exactly thre hundred sixty-two days ago at Biloxi, Mississippi, the trust and responsibility of guiding the affairs and fortunes of your Mississippi State Medical Association were reposed in me. Today, I, as most all others in whom you have vested trust and authority, stand before you to be judged upon my stewardship. The talents I return are not necessarily those of my own earning because our association is a smoothly-functioning team effort.

Mississippi medicine is meeting the challenge in this day of space and the atom. Just as transportation, communication, and the weapons of war have erased time and distance in a turbulent world, so it is with medicine that there is not and can never be again professional isolation or the doubtful convenience of time and distance between the physician and the social, economic complexities which have become a part of his practice. Like Caesar's Gaul, the art and science of healing is divided in parts and provinces with which an enlightened, able profession recognizes it must deal. While the science of medicine achieves victory upon victory in the conquest over disease, the art has assumed new shapes and meanings. Because personal health is the common denominator of all modern endeavor, there is something of us in the circumstances under which care is provided and the social, economic, educational, and industrial aspects of our way of life.

These realizations come into sharp focus for that one of your number whom you select to serve as your President. During the past year, the fulfillment of our collective responsibilities has brought me before many local, state, and national groups in behalf of your service aims. The satisfaction of achievement, the habit of success, the drive and determination to do the job, and the challenges of getting on with it made the excessive demands of my office a series of stimulating opportunities and pleasant endeavors. Your warm and cordial support, the wholesome climate in which you pursue this most noble of professional endeavors, and your willing, able assistance has given me new and rich experiences along with satisfaction.

It has been my privilege to visit each of the component societies conducting regular meetings where I was asked to appear. I sat with your committees, the Council, and worked at regional and national levels including the American Medical Association and Southern Medical Association. It was gratifying to continue my service of some four years as a member of the Committee on Maternal and Child Care of the American Medical Association and to accompany our officers and delegates in representing your wishes before medicine's parent body.

As I visited you individually and appeared before your component societies, I tried to make the point of our responsibilities and the extensiveness of our activity. Few if any organizational endeavors parallel ours because MSMA regularly conducts activities which inevitably characterize it as a substantial business endeavor. On many occasions I have stated that our association has grown from a small group concerned chiefly with didactic academics to the present institution of scientific and socioeconomic prominence.

The 1957-58 association year was one of gratifying achievement through the efforts of many. Our local societies continue to extend their several and ever-growing capabilities in constructive programs of community service. Professional education has a new and vital meaning and the general character of the local medical community has been strengthened. Our state association committees have found new dimensions of depth and productivity. The Council, our able, energetic governing body, has given generously of time and effort in guiding the affairs of the association. Few state medical associations could boast of a better officer corps than you selected to assist your President.

It is apparent that we are reaping additional profits of success and achievement through wise investments of resource and effort in our busy headquarters, the Central Office. While we are presently well equipped and staffed, our administrative capibilities are operating at maximum capacity in carrying out our annual million dollar-plus program. I join wholeheartedly with other officers, committee chairmen, and your Executive Secretary in commending the splendid young women in supervisory and specialized endeavors in our office for their competence, enthusiasm, ability, and achievement. Our Central Office Headquarters Building is, indeed, as much a credit to your foresight and planning as it is a valuable property investment and symbol of the service we are endeavoring to render. We must continue to provide realistically and wisely for the conduct of our affairs through the Central Office and view with objectivity the necessity for maintaining a dynamic, pragmatic folio of administrative policies.

Utter necessity and compelling challenges from which no default is possible require that we recognize our medical association administration as big business. If these urgent needs are to be met effectively, then we must continue to provide generously the modern tools of a complex business world, adequate operational facilities, necessary staff training, and realistic compensation for those people who devote their lives and careers to our organizational and professional purposes.

Philosophically, Mississippi medicine is reaching a new and advanced level in professional maturity. We have learned how to engage in advanced socioeconomic research and, for the first time this year, we have extended the scope of such studies to national level with our own committee and staff resources. We have found that there is no such thing as the easy or casually derived answer. The single line or sentence of useful fact and ultimate truth is laboriously written.

We are discovering that failure to achieve intellectualism, social and economic vigilance, and the development of exhaustive research and study data is nothing more—nothing less—than a default of professional and organizational responsibility. The costly luxury of complacent inactivity is grease on the skids toward professional doom.

American medicine no longer fights a global war for professional freedom. The bold frontal assault of Wagner-Murray-Dingell was almost easy compared to the recent series of peripheral, cold medical wars and the political brush-fire skirmishes which harass and threaten the American system of medical care.

This is the age of the paradox where science reigns supreme and the promise of a fuller, healthier life for all Americans is being better underwritten by dedicated disciples of healing each day. Yet, in this progress man may have sown the political seeds of his own social and economic destruction when he permits the political gnawing away of hard-won freedom.

Too often medical leaders talk of freedom in broad and non-specific terms. Perhaps ultimately the doctor can be a better freedom fighter if he views the issue from the listening end of the stethoscope, the big end of the otoscope, and from the flat end of the hypodermic syringe.

It's neither sinful nor immoral to pursue an honest course of enlightened self interest where the ultimate objective is one of service in a climate of free choice, personal freedom, and the dignity and wellbeing of our fellow man.

There is, in our professional armamentarium, effective medication against political, social, and economic "little strokes" to which American medical freedom seems so susceptible. Let's not stand in dumbfounded amazement at our medical Cape Canaveral while other camps of thought and philosophy fill the American orbit with socialistic sputniks.

Doctors must make a living reality of having descended from the cloistered ivory tower of the past. Most of us may have come down the steps but all of us are not yet out of the ground level entrance.

Too many physicians seem to accept the hue and cry of medicine's enemies: "We are against everything and in most cases we are not positive by being for something" At most gatherings of physicians we find someone saying " . . . we ought to offer an alternate if we plan to oppose this issue." Is this a spurious, rugged individualism; a coverup for failure to understand the issue; or worst of all, an indifference toward professional responsibility?

If American medicine is to discharge its self-assumed, ethically-demanded responsibility, it must neither fear nor fail to stand up and be counted. There is neither dishonor nor vulnerability of purpose and objective in honest negation. All but two of the Ten Commandments begin with "Thou shalt not . . ." Yet, a few of us would brand these divine injunctions as negative positions.

There is solid affirmation in what otherwise might appear as an act much against the British as he was for freedom. In our fertile Mississippi Delta, we spray the cotton bolls not to the end of being exclusively against the boll weevil but rather because we are for cotton.

Need we then fear in facing up to unsound, harmful social and economic issues with a firm, well-founded position of opposition?

Just as there can be no compromise of quality in our professional endeavor, neither can there be compromise of integrity in our philosophical positions. The affirmative is solidly grounded in medicine's dedication, its service endeavor, and the positive results.

We have far greater reason to fear more the weakest in our midst than the strongest in our opposition. Mississippians particularly and Americans generally are ready to cast their lots with integrity and there is neither reason nor necessity for medicine to retreat into the obscurity of indecision and fear. Mississippi medicine is a positive, constructive, and uplifting force for good with increasing capability, unlimited potentiality, and uncompromised dedication.

With a heart full of gratitude, I return your charge and relinquish the commission you gave me, taking as a priceless personal possession the certain knowledge that truth is your quest; diligence, your staff; and service, your purpose.

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Urologic Complications in Abdominal Surgery*

JAMES W. HEADSTREAM, M.D.
Little Rock, Arkansas

The true incidence of accidental trauma to the ureter in the course of abdominal and pelvic surgery is extremely difficult to determine. For example, complete unilateral ligation of the ureter may cause no symptoms and result in silent atrophy of the kidney. Estimates of the incidence of ureteral injury range from 0.5 to 3 per cent for ordinary major abdominal and gynecologic procedures to 10 per cent or higher for the more radical operations for malignant disease. The relative ratio of unilateral to bilateral injury is said to be 6 to 1[1].

Accidental injury to one or both ureters has probably occurred from the onset of surgical efforts to eradicate disease of the female reproductive organs and of the colon and rectum. The first nephrectomy by Simon in 1869 was for an uretero-abdominal fistula.

Most ureteral injuries occur during gynecological operations and in the performance of abdomino-perineal resection for carcinoma of the rectum.

The three most common types of injury to the ureters are ligation, crushing with a hemostat, and incision or section during sharp dissection. Extensive stripping of the ureter with subsequent slough has been a less common injury. This is more prone to occur in a post irradiated case of carcinoma of the cervix which is subjected to radical surgery. The ureter will seldom tolerate both radiation and radical surgery.

The most common sites of injury are in the ovarian fossae, to the portion of the ureter near the uterine arteries, and to the segment close to the uterine cervix.

Injury to the ureter generally falls into two classifications, those recognized immediately and those discovered during the postoperative period. Either one or both ureters may be involved and each classification poses its own particular problems.

The most common sequelae of ureteral injury are ureterovaginal and ureteroabdominal urinary fistula.

MANAGEMENT OF URETERAL INJURIES RECOGNIZED AT TIME OF OPERATION

Ligation or acute angulation of the ureter recognized during the surgical procedure is treated by removal of the offending ligature, followed by inserting an ureteral catheter for seven to ten days.

Incomplete section of the ureter may be treated by simple closure of the incised area with fine catgut sutures, leaving an indwelling, splinting catheter for seven days. Extraperitoneal drainage is, of course, used in all cases in which the urinary tract has been opened.

A completely divided ureter requires end-to-end anastomosis if it is at an accessible level. The anastomosis is made with four sutures of 0000 chromic catgut placed in the muscularis only. The area may be splinted with a T tube introduced through an incision proximal to the anastomosis or more preferably by the use of two separate catheters. One of these is passed downward through the anastomosis and another upward to the renal pelvis for drainage. (Fig. 1)

If the severed ureter is low, ureteronecystostomy is the procedure of choice. It seems that most any technique of re-implantation into the bladder as long as it is low in the bladder is acceptable. There will be later vesico-ureteral reflux in some cases

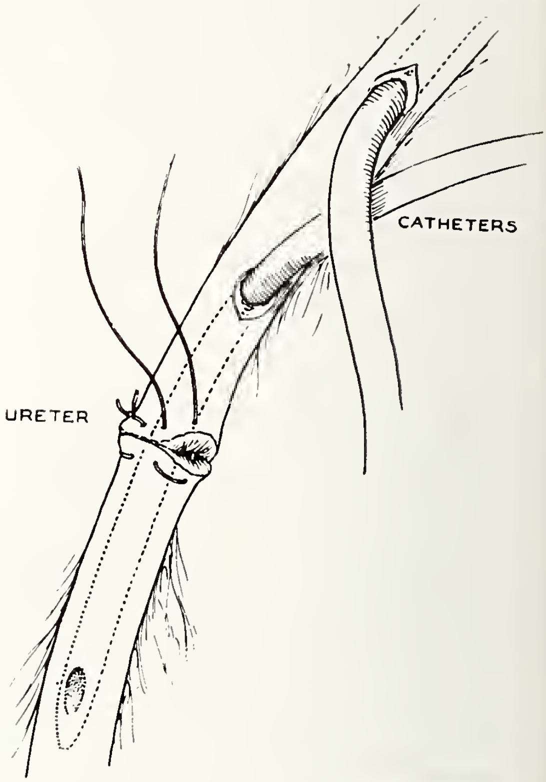

Fig. 1. Method of repair of severed ureter.

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*Presented before the Mississippi Chapter of the American College of Surgeons, January, 1958, Jackson, Miss.

no matter what technique is used. A splinting catheter is not necessary if a linear incision through the ureter is made above the anastomotic site to provide good drainage while healing occurs. Of course, supra-pubic bladder drainage and extra-vesical drains are used. (Fig. 2)

If a large segment of ureter has been excised, end to-end anastomosis or re-implantation into the bladder is not possible. A decision must be made whether to ligate permanently the ureter or to use some temporary diversion method until more definitive surgery can be accomplished at a later date. If the kidney is a solitary one, or the status of the opposite one is not positively known, renal function must be preserved. (Fig. 3 a, b)

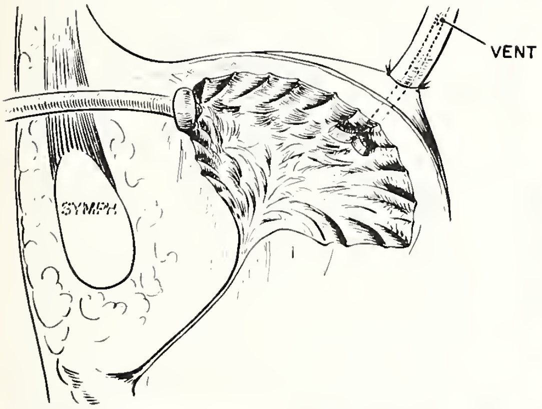

Fig. 2. Ureteroneocystostomy. Note absence of splinting catheter.

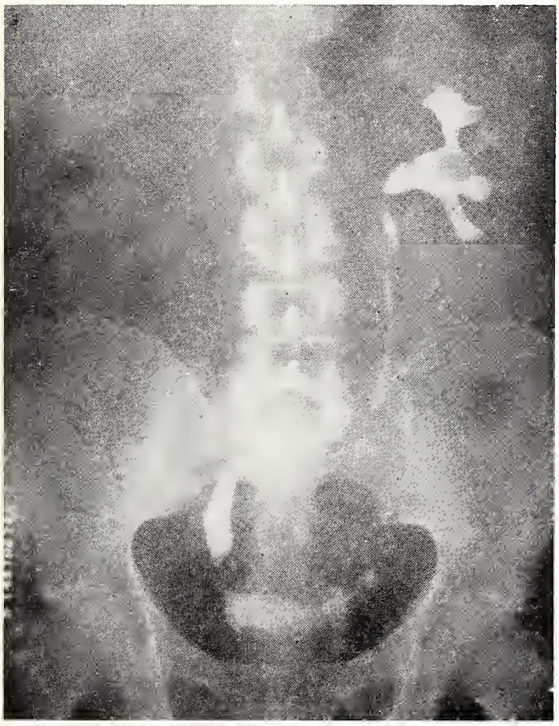

Fig. 3 a. Destruction of large segment of ureter from solitary kidney during colon resection. Temporary nephrostomy. Six weeks later the upper third of the left ureter anastomosed across midline to lower two-thirds of remaining right ureter, re-establishing urinary drainage.

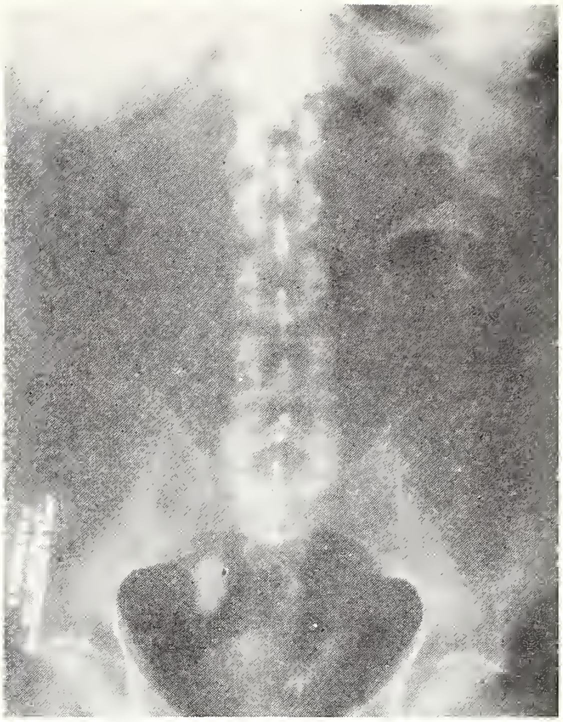

Fig. 3b. Postoperative IVP.

Temporary diversion methods such as nephrostomy, or securing a ureteral catheter through the proximal segment with nonabsorbable suture material and bringing the catheter out extraperitoneally are applicable.

If adequate information such as a preoperative excretory urogram is available, and the opposite kidney known to be normal, and if there is no infection in the injured side, and the risk of prolonged surgery is significant, probably the best procedure is ligation of the ureter. Of course, the possibility of later nephrectomy exists.

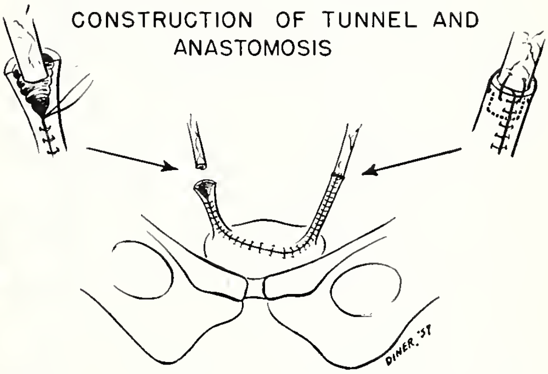

Fig. 4. Lower ureter constructed from bladder flap.

If the loss of ureter is low, a tube from the bladder wall can be constructed to bridge the gap, if the patient's condition will permit the additional operative period. (Fig. 4)

MANAGEMENT OF INJURY WHEN RECOGNIZED LATE

Bilateral ureteral ligation or angulation should be suspected in any pelvic case in which there is a cessation of urinary output in the absence of shock. Mechanical obstruction must be ruled out, and this can be simply accomplished by systoscopy and retrograde catheterization. In case of such findings there is considerable divergence of opinion as to whether deligation or temporary nephrostomy is indicated. If the patient's condition permits, it is my opinion that deligation is the procedure of choice. A search for the offending ligature in the re-opened abdomen is extremely difficult and hazardous without the help of a cystoscopist, passing large catheters from below to the point of obstruction. In so doing, the surgeon can readily identify the ligated area and the sutures can be removed. Then the catheters are passed to the renal pelves and left indwelling for two weeks. (Fig. 5 a, b)

There may be no sign or symptom of unilateral ligation, but in some cases, mild renal pain or tenderness may be a clue to this complication. Excretory urography is very helpful, or retrograde pyelography, if indicated, is helpful.

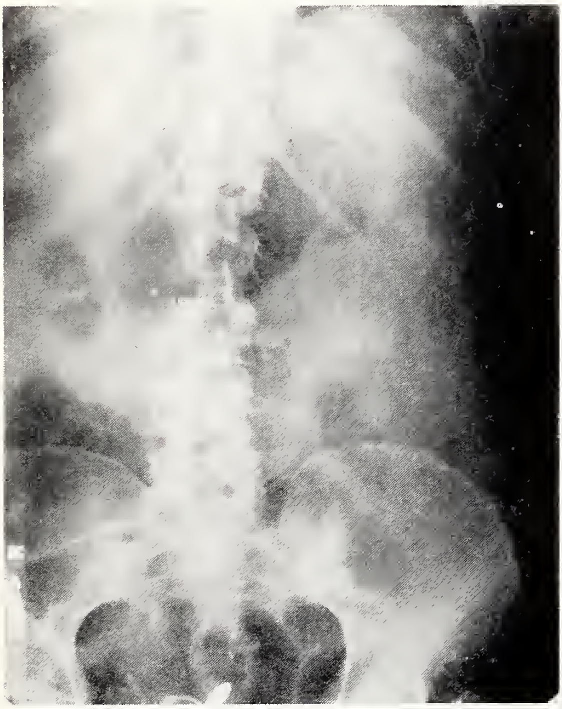

Fig. 5a. Case of bilaterally ligated ureters during hysterectomy. Cystoscopy revealed obstruction. Deligation was performed.

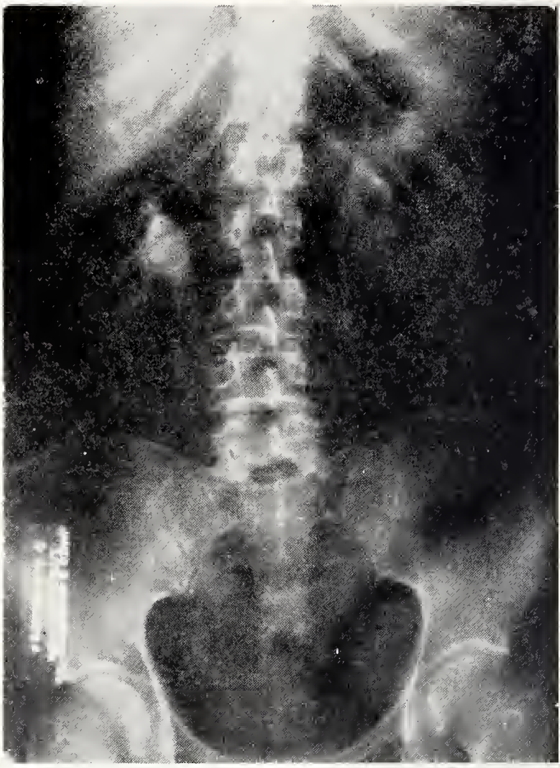

Fig. 5b. Postoperative IVP, 6 weeks later.

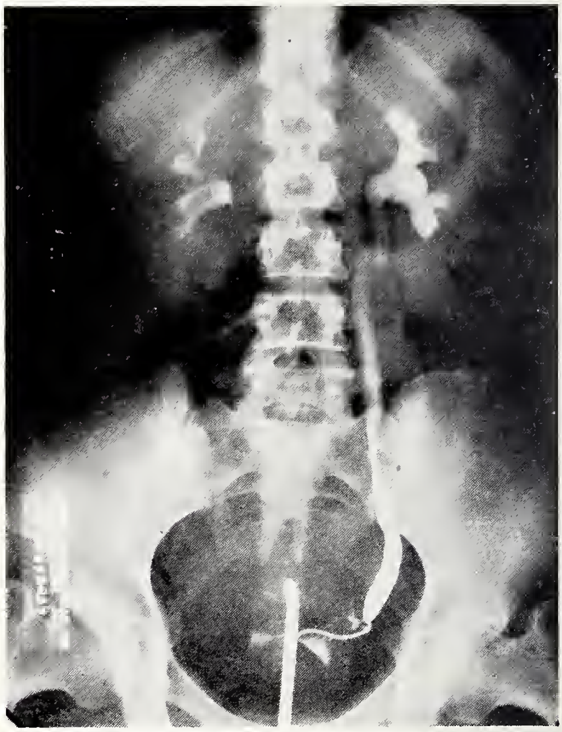

Fig. 6a. Ureterovaginal fistula following hysterectomy. Ureteroneocystostomy 6 weeks later.

Oftentimes the first sign of unilateral ureteral injury is the occurrence of an ureterovaginal fistula which is the result of necrosis approximately one week postoperative. There is usually satisfactory drainage which prevents hydronephrosis. The preferred time for repair is about six weeks after the original injury. (Fig. 6 a, b)

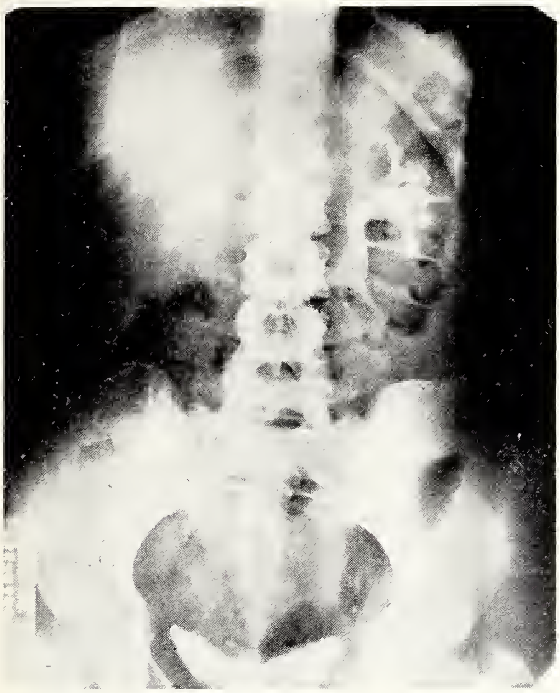

Fig. 6b. Postoperative IVP.

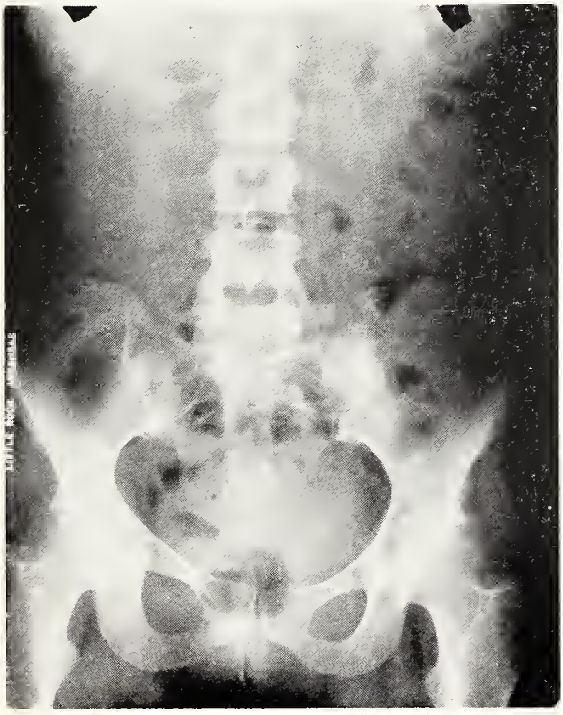

Fig. 7a. Ureterovaginal fistula following hysterectomy. IVP (note absence of function requiring surgery 10 days later). Bladder flap technique.

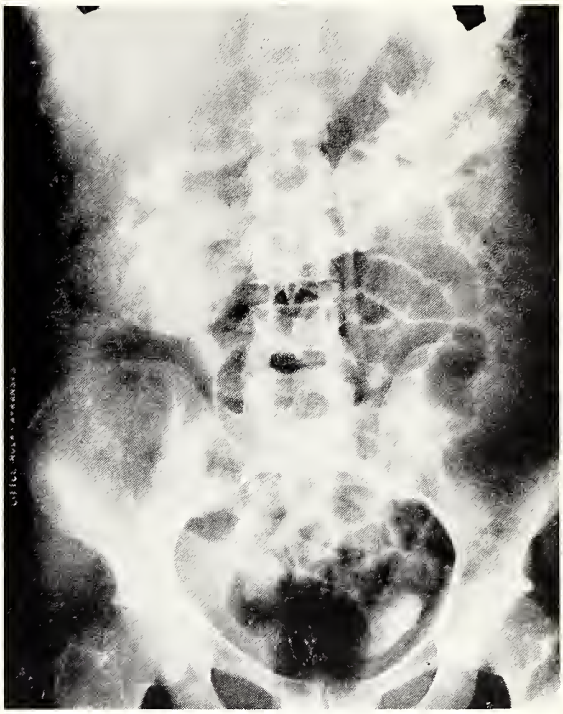

Fig. 7b. Postoperative IVP.

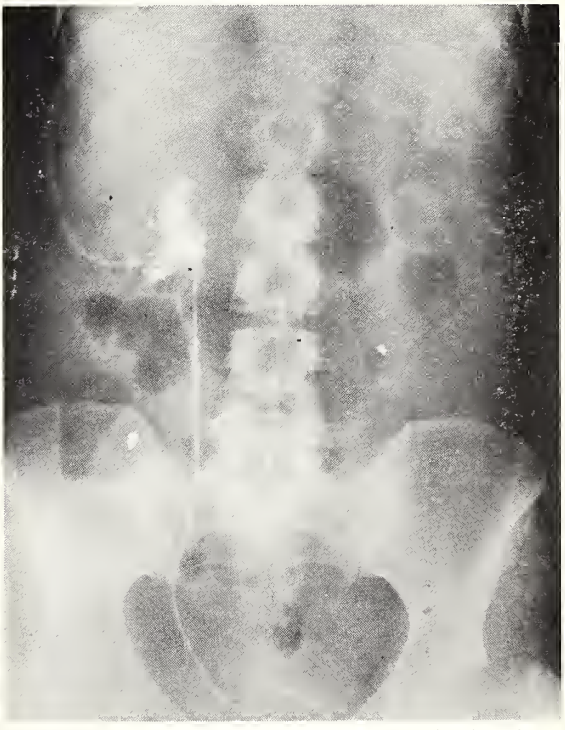

Fig. 8. Uretero-abdominal fistula following hysterectomy. Temporary nephrostomy. Four weeks later, ureter catheterized and nephrostomy tube removed. Ureteral repair not necessary. (One advantage of catgut sutures in pelvic surgery.)

Re-implantation of the ureter into the bladder or the bladder flap method in those too high for re-implantation will correct the majority. (Fig. 7 a, b)

Of lesser incidence is uretero-abdominal fistula, presenting ascites, ileus and sepsis. Temporary nephrostomy with retroperitoneal drainage and later ureteral repair is the usual management. (Fig. 8)

Another type of ureteral obstruction producing hydronephrosis is the occasional case of medial deviation of the ureters complicating proctosigmoidectomy. In this a patient following abdominoperineal resection may develop bilateral hydroureteronephrosis with serious upper urinary tract complications. The ureter shows medial deviation and dilatation from the mid sacral region upward. This condition may be obviated if care is taken to develop adequate peritoneal flaps and the pelvic floor is reconstructed without tension upon the ureter.

The bladder may be injured occasionally in procedures within the pelvis. An incision into the bladder recognized at the time of surgery is treated by a single layer closure with chromic catgut followed by insertion of an indwelling urethral catheter for a few days.

Vesicovaginal fistula is more likely to occur in total hysterectomy. This particular type of fistula is usually difficult to approach vaginally, due to its high location, and is better repaired by an abdominal approach with separation of bladder from vagina and transvesical repair. (Fig. 9) Occasionally a vesicoureterovaginal fistula may be encountered. In these the ureter is re-implanted into the bladder and transvesical closure of the

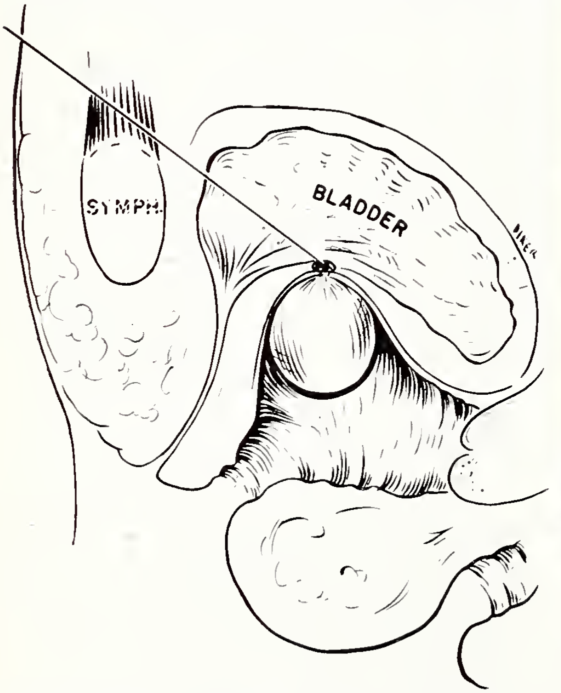

Fig. 9. Transvesical approach for repair of vesicovaginal fistula. Traction on string and ball affords good exposure of fistula.

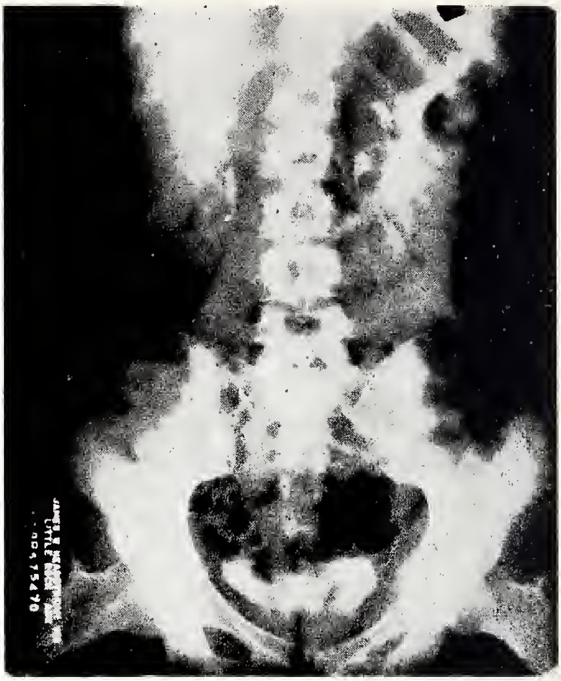

Fig. 10a. Postoperative IVP in case of vesicoureterovaginal fistula incurred during hysterectomy. Neoureterocystostomy and transvesical repair of vesicovaginal fistula.

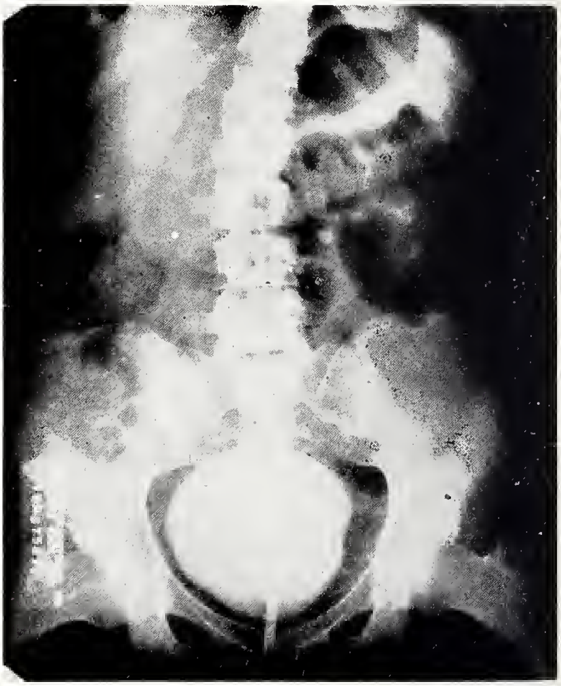

Fig. 10b. Cystogram (absence of vesicoureteral reflux).

vesicovaginal fistula is accomplished. (Fig. 10 a, b) Optimal time for repair is three months after injury.

PREVENTION OF URETERAL INJURIES

A more complete urologic study prior to surgery when a difficult pelvic procedure is contemplated will be helpful in several respects. Intravenous urography would disclose the presence of ureteral anomalies, the possibility of solitary or ectopic kidney, as well as any disease process, such as pyelonephritis, calculi, etc. This knowledge would be helpful in avoiding injury to these structures and, in event of injury, would make the decision of management much easier.

There are divergent opinions about preoperative placing of ureteral catheters to assist the surgeon in locating the ureters readily.

Most of the avoidable injuries to the ureter result from lack of vigilance in the placing of clamps and ligatures.

More bladder and ureteral injuries follow procedures where the surgeon reports that the dissection was easy and satisfactory, than when it is reported as difficult. In the large uterine or ovarian tumors and infiltrating colon neoplasms the surgeon usually identifies the ureter early in the operation and thereby avoids injury.

The meticulous surgeon has little need for identifying catheters, and the other type very likely would obtain a false sense of security, injuring both ureter and splinting catheter.

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Today, as never before, prayer is a binding necessity in the lives of men and nations. The lack of emphasis on the religious sense has brought the world to the edge of destruction. Our deepest source of power and perfection has been left miserably undeveloped. Prayer, the basic exercise of the spirit, must be actively practiced in our private lives. The neglected soul of man must be made strong enough to assert itself once more. For if the power of prayer is again released and used in the lives of common men and women; if the spirit declares its aims clearly and boldly, there is yet hope that our prayers for a better world will be answered. —Alexis Carrel

Emergency Medical Care of the Injured*

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My interest in emergency medical care of the injured covers parts of four decades. I have not been a doctor of medicine quite that long, but before I was of Boy Scout age I experienced my first tornado. I was drafted to go around town, to knock on such doors as were still standing, and to collect chamber pots and wash basins for use in the local National Guard Armory which was filled with wounded lying on the other doors of the town, now off their hinges and placed across saw horses from the adjacent lumber yard.

Since that time I have had a peculiar predilection for disaster. When they lit the fuse under Texas City I was close enough at hand to be summoned to the scene by the echo of the blast itself. I was once spared an undesired duty of escorting a visiting dignitary when the ammunition dump next to the airfield blew up with a roar that demanded attention. More recently, Hurricane Audrey severely damaged my homestead and I had to walk and wade the last five miles of the journey to rejoin my family there. And from time to time there have been lesser incidents of train wrecks, fires, and military actions.

I mention these things for two reasons. First, in the hope that I might benefit from the confused distinction between an expert and a specialist—I have certainly specialized in acute epidemic trauma. And second, to point out that you, too, may have luck like this. Not so much of it, I hope. But even if you consider my misfortunes extreme, and draw a statistical frequency distribution ranging on the abscissa entirely to the left of my own experience, it is evident that an awful lot of you are going to see a great deal of trauma in future years, and very few of you will see a really negligible amount. I can say with assurance that simple chance and complicated circumstances will bring a considerable amount of trauma to your attention, regardless of the fact that the sign on your door may read "Practice Limited to Cardiology." You may immediately transfer these patients to the care of someone else, but you can hardly do so without being obligated to render some sort of emergency treatment in the meantime.

Even if you know that you are going to work in orthopedics or general surgery, in which trauma will be a large element in the practice of a profession which requires long training and a high degree of complex skill, the really simple fundamentals of the earliest care of the injured are quite worthy of your attention. The practice of surgery is not made up entirely of the careful and intricate rites in the hushed temple of the operating room, or the learned deliberations over data on charts. There are many times when it takes on all the appearance of a rat race; when decisions are made on the run, and while running in circles; and when decisions must be translated into actions of a rather simple mechanical order.

One does not have to postulate a nuclear war, or even a major natural disaster in order to see good reasons for learning the supposedly routine techniques of first aid, or for developing a personal philosophy and pattern of action for one's own part in the earliest care of the severely injured under very trying circumstances. Let me give two examples.

Cumulative mortality following severe injury shows a curve of rapid rise, with later levelling-off. (Fig. 1) It is one of the brightest facets of modern surgery that hospital treatment has been able to force such a levelling-off that only two or three per cent of battlefield wounded die after admission to a hospital (experience of the United

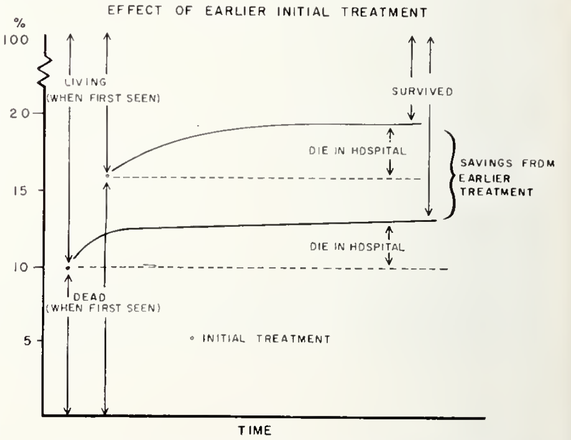

Fig. 1. More lives can be saved by earlier initial treatment than by perfection of hospital care. (Not previously reproduced.)

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*Address delivered at the University of Mississippi Medical Center, Jackson, on January 10, 1958, under the auspices of the Medical Education for National Defense Program.

†Presently at Walter Reed Army Medical Center, Washington, D. C.

States Army in Korea, 1950-1953). Our knowledge of what happens in the first minutes and hours after injury is somewhat hazy, but it appears to me that we can save a great many more lives by earlier treatment than we can by attaining absolute perfection in hospital care.

Another example of the need for advance planning; some time in April the high school next door to your hospital will hold its spring prom. If, on that night, one teen-ager idly remarks to another: "My Dad's '54 station wagon will outrun your Dad's '58 convertible," the result is likely to be one convertible load of bodies in the morgue, and one station wagon load of injured in the emergency room of the University Hospital. These five or six seriously injured patients would certainly incite an intense buzz of activity. And this activity would probably give a strong appearance of confusion and stress—except that your professional superiors have long been giving detailed attention to plans for emergency care of the injured. Without such forethought, I believe you would have to set the pressure sensitivity of your panic buttons at five patients instead of fifty. And I am quite certain that, if you were the senior surgical specialist in one of the smaller towns of the state, the simultaneous admission of these five or six patients to your fifty-bed hospital would confront you with something more than just the *appearance* of stress. You would be in for many hours of grueling work, and work which carries little immediate and inherent satisfaction—it contains too many interruptions and apparent digressions. Your surgery would be liberally salted with obstinate delay and clamorous emergency, conflict of supply and demand, expediency and adaptation, forced delegation of work, and running consultation.

The skills and judgments demanded in such situations are exactly those demanded of the staff of a military hospital which is attempting to care for a great mass of wounded after a swift, accurate, and vicious blow by the enemy. I do not feel that I am mouthing platitudes to say that the technical skills demanded in these situations are precisely those encompassed in the professional practice of medicine; and that the character of the judgment which is necessary to put these skills to good use is that contemplated by the ill-defined term "triage."

I am most willing to admit that triage is not self-explanatory, whereas the term "sorting," to which triage has been freely translated, does have an immediate meaning. I have used the term sorting in medical context, and I am in good company with other authors who do. But now I am beginning to deplore the passing of the older term. Triage is not entirely encompassed by sorting. True, triage comes from the French, *trier,* meaning to cull, or sort and dispose of. As such, it has a slight surgical-lexicographical connection — the great American surgeon Halsted must have been a great man at triage, since, I am told, he insisted on picking out one by one the beans which were to be ground for his coffee. Triage may well mean to cull and to sort if it is applied to coffee beans, but to me it does not mean just to "cull" or "sort" if it is applied to living human beings. To translate the French noun *triage* into an English gerund *sorting* is an even poorer rendition of meaning than to translate the delicate noun *liaison* into the blunt intransitive verb, *to fornicate.*

Triage means roughly the process of deciding what is to be done first, and what is to be done next after that. It is a *series* of decisions made over a period of time structure, and made on the basis of individual wounds and individual reactions in the dynamics wound physiology. It is a bitter travesty to pass off as the entire process of triage some fancy system of hanging vari-colored tickets on patients as they enter the door; even worse is the business of stamping patients with indelible ink on the forehead or the dorsum of the hand. I simply do not believe that human patients can be definitively classified by department store methods, as stock for the specialty shop on the sixth floor, or stock for the salvage table in the basement.

Triage is a continuous process. And triage is concurrent with treatment. Triage involves the decision that treatment is needed at once, or that treatment can be deferred. If treatment is given, then the current category of the patient is thereby changed; if treatment is not given, then the clinical status of the patient changes, and his category changes with it. It is for this reason that any list of sorting classifications will fail, no matter in how much detail it is written.

If you accept that triage is continuous, and is concurrent with treatment, there are then only two principles of triage to learn, and you will know triage—*if* you know medicine.

LIFE takes precedence over LIMB or FUNCTION.

The IMMEDIATE takes precedence over the ULTIMATE.

It is possible to describe the process of triage using only one patient with several wounds and complications, but the illustration is perhaps more clear if at least two patients are used.

Let us suppose that Mr. A and Mr. B have been involved in the same explosion, and you are called to see them both at the same time. Mr. A has a compound fracture of the thigh, with laceration of the femoral artery; he also has a penetrating wound of the abdomen. Mr. B has an open wound of the chest, and a penetrating wound of the eyeball with intraocular foreign body. Both are severely burned.

The first priority is a tourniquet on Mr. A's thigh, to stop the spurting of blood from the femora. Next priority goes to temporary occlusion of Mr. B's sucking chest wound. Both of these are wounds which are immediate threats to life. It is foolish to argue over whether "hemorrhage," generically described deserves precedence over or subordination to "asphyxia," generically described. Both are measured in degree, and it is relative danger which will count.

With third priority we move from Mr. B back to Mr. A's belly wound; it is a threat to life, but not so urgent, usually, as is gross hemorrhage or impending asphyxia. If you are treating these patients at the scene of the accident, or in a temporary aid station, the action demanded by this third priority is simply to see that Mr. A gets out on the first ambulance, not the second one. If you are treating these patients in the hospital emergency room, the action is to schedule A for operation as soon as possible, and to start preparing him for the surgery. Once this start is made, you can turn to the fourth priority—still Mr. A, but this time for his injured lower extremity. Even without the abdominal wound he would still deserve a high priority for definitive surgery. The tourniquet is a hazard to the limb, and something better must be arranged for, and without delay.

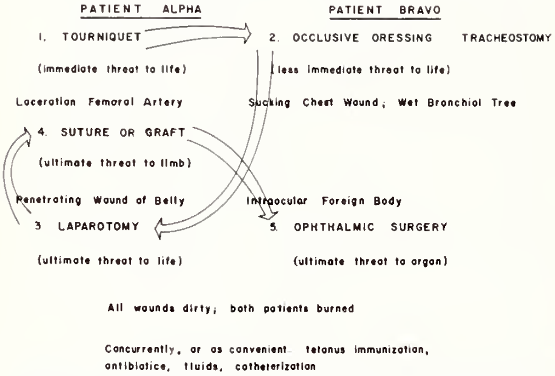

PATIENT ALPHA
PATIENT BRAVO
1. TOURNIQUET
2. OCCLUSIVE DRESSING TRACHEOSTOMY
(immediate threat to life)
(less immediate threat to life)
Laceration Femoral Artery
Sucking Chest Wound; Wet Bronchial Tree
4. SUTURE OR GRAFT
(ultimate threat to limb)
Penetrating Wound of Belly
Intraocular Foreign Body
3 LAPAROTOMY
5. OPHTHALMIC SURGERY
(ultimate threat to life)
(ultimate threat to organ)
All wounds dirty; both patients burned
Concurrently, or as convenient tetanus immunization, antibiotics, fluids, catheterization

Fig. 2. Triage is concurrent with treatment, and priorities change between patients as treatment is carried out. (Not previously reproduced.)

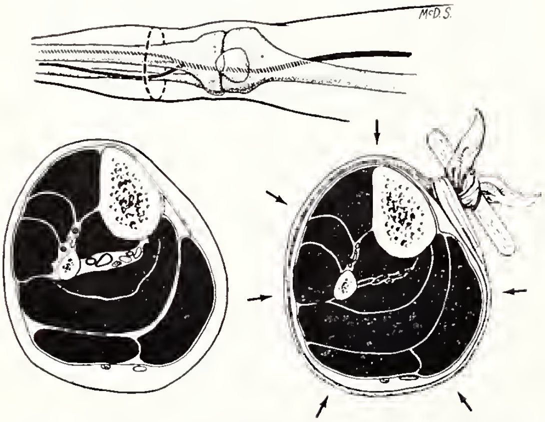


Fig. 3. Centripetal pressure from a tourniquet will occlude vessels even in interosseous areas. (From Am. J. Nurs., 57: 444-445, 1957.)

For fifth priority we turn back to Mr. B. The eye wound is a serious threat to a most important function, but it is probable that the ophthalmic surgery can be put off for a little while—at least a few hours—without the delay critically affecting the end result.

Sixth priority is back again to Mr. A for the fractured femur. But if by now he has not already been put up in a fairly decent splint—good enough to permit him to be moved to the operating room for his abdominal and vascular surgery—this is a sure sign that you are working alone. Either you have no assistants, or they are useless for the time being. If you are working in any reasonably staffed emergency room, a great deal will have been going on for some time: someone will have been making out records, starting fluids, passing tubes, scheduling surgery, collecting specimens for the laboratory, and making the rounds with antibiotics and tetanus toxoid. But even if you are working alone, the continuous and concurrent nature of triage is evident. You bounce from one patient to the other as priorities change, but the priorities change principally by virtue of what you have *done* to change them. Please note that *first* precedence for the ambulance and the operating room went to a *third* priority wound.

It takes several years to teach you the therapeutic techniques of your profession, and it is out of place for me to make a pass at reviewing it now. But it is not amiss to review with you some of the simple procedures of that which is loosely called "first aid." Since laymen are admitted to the practice of first aid, there is a tendency for professional people to bow out of it; they assume that it is "off limits" to them; that it is beneath their dignity; or that they are certified experts in it by virtue of their holding a professional degree. None of these assumptions are true. There will always be times and places when even the physician is limited to the materiel and techniques of the first aider. When these occasions occur, the public expects a masterful performance from him who holdeth the M.D. degree. But he often lacks the practical ability to deliver a performance of good caliber. The unfamiliarity of the circumstances and the raw material seems to induce a sort of block in the process of transforming professional knowledge into simple and effective action.

For hemorrhage, the simplest and most effective means of control is direct pressure over the wound. With rare exceptions, direct pressure control of major arterial bleeding means direct *manual* pressure—and this ties down one assistant per wound. The so-called "pressure dressing" will control capillary and venous bleeding. However, it will not control major arterial bleeding unless the dressing is wrapped on so tightly that it is in effect a tourniquet itself, though seldom a really good one. Dependable and lasting control of bleeding from a major artery is effected only by clamp, ligature, or a *good* tourniquet.

It may be indulgence in semantic quibbling, but I have never believed in the dictum that the tourniquet is a method of last resort, if by that you mean it is to be used after all lesser methods have been tried and found wanting. Such a trial and error process is expensive in blood, and you may come to the last resort when it is too late. If you are faced with major arterial bleeding from an extremity, and if you cannot see fit to clamp and tie at once, then use a tourniquet *at once*. I say this with an emphasis which implies conviction, but I must admit that the supporting data are not unequivocal. Like the old lady who sent a neighbor to get some *good* bluing ("You break off a piece, and put it in water, and if it's *good* bluing, it either sinks, or it floats, but I can't remember which"), I recognize that the tourniquet is either a life-saver or a really dangerous instrument. Maybe both.

A tourniquet is not to be loosened periodically. But it should be removed as soon as it is possible to make some better arrangement. I have implied freely that a tourniquet is a hazard to limb; it can be a hazard to life, too, through tourniquet shock. It is difficult to formulate a rule of thumb as to when to remove a tourniquet; the best you can do is to tell them to put it on and leave it on. But you are not laymen; you are the ones who can decide that the tourniquet can and should come off.

If a tourniquet is used, it goes as low on the limb as possible; it is neither necessary nor desirable to arbitrarily place it above the elbow or knee. A tourniquet for the control of major arterial bleeding must be quite tight. The only way to learn how tight is quite tight is to put one on your own thigh, twist it up until it hurts, and then palpate for your dorsalis pedis. Chances are that it will still be pulsating. Uncomfortably tight may not be tight enough.

Acute obstruction of the airway is an emergency ranking with or above severe hemorrhage. Fortunately, a complete obstruction of the upper airway is often due to a foreign body, or to disorganization and collapse of the musculature from massive wounds of the jaw and neck. These can often be remedied by simple extraction of the foreign body; placing traction on the tongue after transfixing it with a safety pin; manually repositioning the damaged parts into something approaching anatomical alignment; or placing the patient in the "coma" position. Certainly these measures may give a few moments of respite in which to prepare for tracheostomy.

Tracheostomy may, of course, be indicated for *lower* airway obstruction as well, or for central depression of respiration in head wounds, either to cut down on upper airway dead space, to diminish resistance to air flow, or to facilitate aspiration of the bronchial tree.

In general, in the earliest care of the severely injured, tracheostomies are too few and too late, but the procedure must not be taken lightly. The operation creates a significant postoperative nursing problem. The patient cannot cough, and he cannot cry out for help. I have seen one patient drown in his own blood, coming from an unnoticed skin bleeder in the tracheotomy incision. And in the laboratory in which I work, we have noticed in shocked animals that a tracheostomy, done for the purpose of making accurate ventilatory studies, cuts down the survival time of the animal by something like 20 per cent.

In spite of these sobering considerations, if you have any doubt about whether or not your patient needs a tracheostomy, he probably does.

An open wound of the chest is usually far easier to deal with than is respiratory obstruction. All it takes in the initial stages is a good gauze dressing—say an abdominal pad—large enough to cover the hole with a good margin. Vaseline gauze is useful but not essential. The dressing can be reinforced with adhesive tape as time permits.

So much for wounds which are immediate threats to life. The *ultimate* threats to life include:

Shock—from any cause.

Infection—principally in the body cavities.

Continued bleeding, not accessible except by major surgery.

Wounds of the abdomen fall into all three of these categories. The surgical literature of trauma does document the role of intraperitoneal bleeding as a cause of death, but too often infection gets the most emphasis. A patient with a belly wound deserves top priority for surgery. Contrary to the official position of the armed forces, I believe he always will hold a top priority, atomic war or no.

If the volume of patients, or the time distance from the hospital, indicates a significant delay before abdominal surgery can be performed, there is still a great deal which can be done. Antibiotics, fluids, and a Levine tube cannot be passed off as either idle temporizing or as "routine" preoperative preparation. They may provide enough active support to tide the patient over a major delay before his time comes at the operating table.

Similarly, a urethral catheter should be passed and left in place if there is likely to be any considerable time lag in a patient with presumptive penetration of the bladder. True, your urologist colleague prefers to receive his patients without prior instrumentation, but it is reasonable to expect that he would also prefer to receive them without a well established extravasation.

I may well be wrong in not placing some reservations on the classification of infection as an ultimate rather than an immediate threat. An enteric bacterial factor in the rapid promotion of irreversible shock is getting more and more attention, so much so that the bacterial factor *in the wound* now stands in relative neglect. In our laboratory we are obtaining some most interesting data from the study of a "naturally occurring" infection in an experimental wound. We deliberately inflict the wound, but we do not inject bacteria or grind in street dirt. A wound infection occurs without any further effort on our part, and it often is of such virulence as to kill the animal in 8 - 12 hours. This is certainly a rapid course, in comparison to traditional teachings on the time relationships of wound infections.

Perhaps the most important ultimate threat to life is that conglomeration known as "shock." The fact that I place shock as an ultimate threat indicates that I distinguish it from simple exsanguination. I mention shock from "any cause," simply because I do not know what the causes are.

I believe it safe to speak about the treatment of shock to a professional audience. But if you are teaching emergency medical treatment to laymen you have to discuss diagnosis before treatment, and I question the practical utility of detailed clinical descriptions of the various shock states. For example, there is one syndrome which includes: an anxious facies, a sweaty brow, pale skin, a drawn and haggard look, dulling of visual and auditory perception, a detached attitude toward the realities of environment, hypotension, and bradycardia. Now my own normal pulse rate is 58, my normal blood pressure is 90/60, and in other respects I present a walking picture of this type of shock. However, I doubt if I would be of much use as a training aid in teaching laymen how to discriminate between who will benefit from intensive shock treatment and who will not.

Several years ago I became sufficiently impressed with the futility of teaching laymen the fine points of shock, and I came to the point of deleting all references to shock *per se* from an intensive 8-week course of instruction for lay medical assistants. They were still taught gentle handling, judicious relief of pain, protection from the elements, allaying of fear, and positioning of the patient. But they were taught that all patients deserve these things, and no attempt was made to pass off on them the myth that these things constitute a regimen of "treatment" for shock. For treatment they were given a tangible and simple rule of thumb as to amount of presumptive blood volume loss, and presumptive need for blood replacement:

Amputation, Major Wound, or fracture	Or Burn	Blood Volume Loss
Forearm, foot	10-20%	500 ml
Arm, calf	20-30%	1000 ml
Thigh, buttock, shoulder	30% plus	1500 ml

If whole blood, plasma, or plasma expanders are available to you in the emergency situation, then use them according to what you have otherwise been taught. If they are not, then use saline solutions in quantities *two* or *three times* as great.

When threats to life, immediate and ultimate, have been countered as best you can, then you turn to threats to limb, organ, and function. For early emergency work this essentially means threats to *limb;* repair of vital organs is the subject of complex surgery. If you do not already have your own standard pattern for emergency splinting, I offer the following:

For the upper extremity, the chest is a useful and readily available splint. A good illustration of this principle is Figure 20 in Hampton's textbook on *Wound of the Extremities in Military Surgery.* Taking the cue from Hampton, the Medical Training Center of the United States Army went one step further in developing a multi-purpose upper extremity splint for use by aidmen in the field. It is made of three triangular bandages, and has come to be called the "Aidman's velpeau."

The sling supports the forearm and elbow. The hand can be bandaged in position of function against the knot on the upper chest. The humerus is splinted neatly against the chest wall if a little padding is placed under the elbow. If the tails of the sling are reversed, with the external or superficial tail going over the *un*injured shoulder, the tendency is to force the shoulder up and back, giving good support to a fractured clavicle. If the

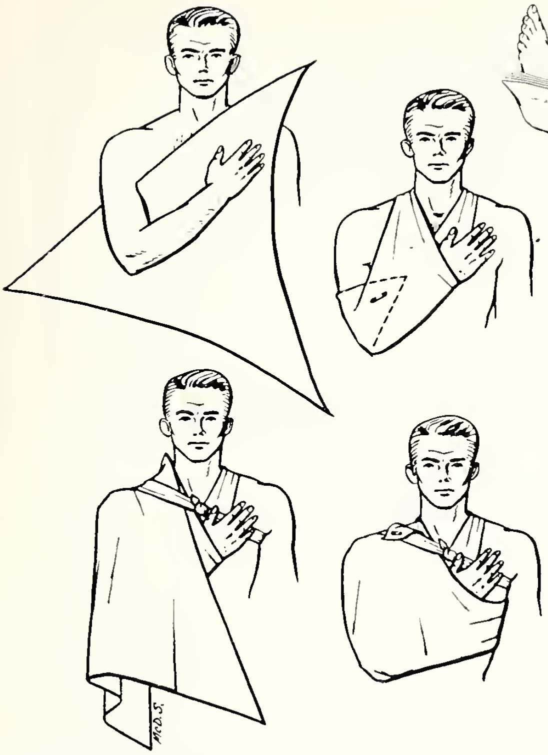
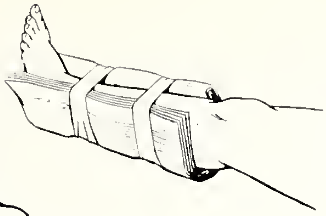


Fig. 4. The "Aidman's Velpeau"—a multipurpose emergency splint for the upper extremity. (From Surg. Clin. N. Am., 36: 1191-1208, 1956.)



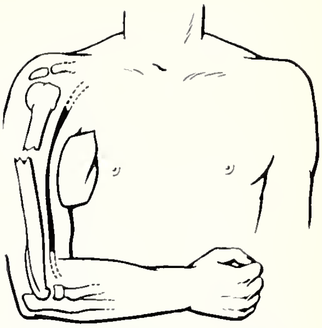


Fig. 6. A leg splint can be improvised from a Sunday newspaper, a pillow, or a folded blanket. (From Am. J. Nurs., 56: 1120-1124, 1956.)

Fig. 8. An auxillary pad may be a harmful fulcrum. (From Am. J. Nurs., 56: 1120-1124, 1956.)

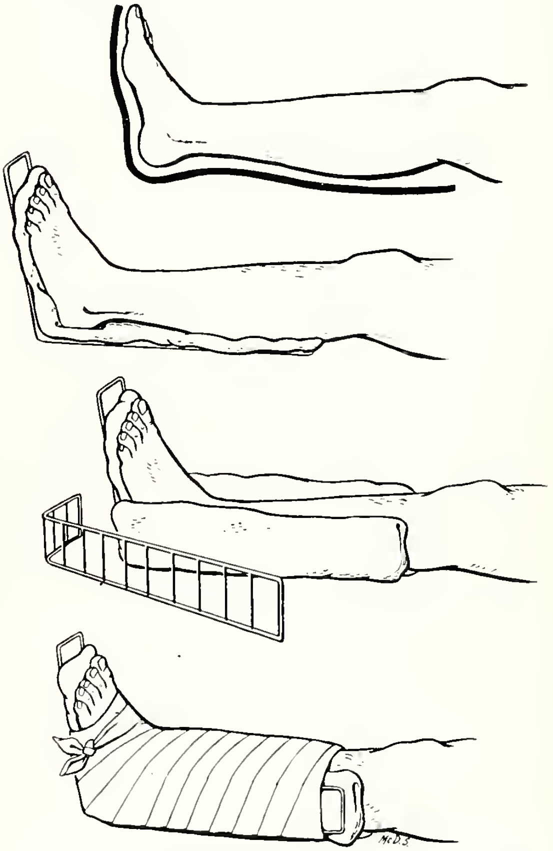


Fig. 5. A wire ladder arrangement gives smooth and even support to a fractured lower leg. (From Surg. Clin. N. Am., 36: 1191-1208, 1956.)

forearm is fractured, the rig is improved by the addition of a single volar splint—basswood, wire ladder, cardboard, or folded magazine. With such modifications as these this splint can be used for anything between the sternoclavicular joint and the middle phalanx.

For the foot, ankle, and lower leg, one of the best splints is a wire ladder arrangement. If standard materials are not available, improvised splints of pillows or newspapers will do well enough for a while.

For fractures of the thigh, some sort of traction splinting is desirable, but I belong to the minority who feel that this is not a matter of prime importance.

If you are willing to take the time to actually study and practice its use, the Army Leg Splint is an excellent choice for splinting the thigh. However, it is far too complex to be figured out on the spot for the first trial.

For general emergency use the best lower-extremity splint I know of is the Stryker splint, a padded aluminum shell, with provisions for simple traction.

We have now covered the distance from chin to heel with outlines of treatment procedures, but it is not the picture of these techniques that I wish to leave with you. I would like to use this brief presentation as a base to show to you how even the earliest emergency care of the injured—the so-called first aid—is a matter of the logical application of the basic medical knowledge which is already in your possession. Let us take some of the points in which my recommendations differ from those you may read in first aid manuals, and

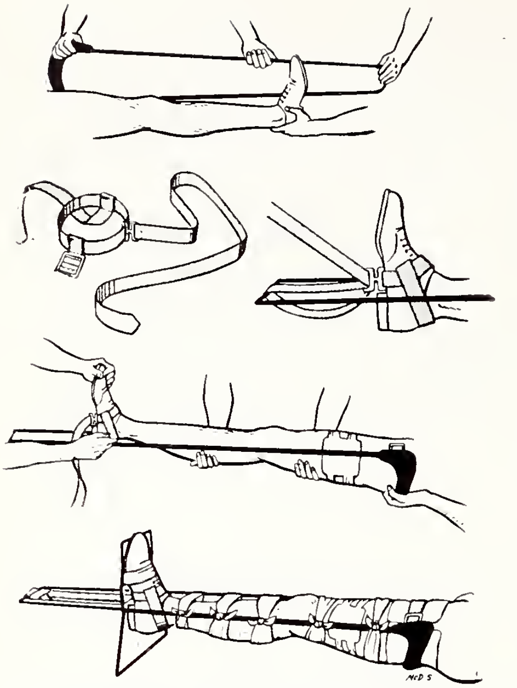


Fig. 7. The Army leg splint is quite effective, but its use should be practiced in advance of the emergency. (From Am. J. Nurs., 56: 1120-1124, 1956.)

let us apply the basic medical sciences to an examination of "Why?".

For example, on splinting the upper extremity I mentioned padding under the elbow. This is not because the elbow is a bony prominence, which is often the first rationalization offered. The padding is needed there to help splint the humerus, because there is a void space behind an elbow which is supported in a sling. If you give three triangular bandages and an abdominal pad to a supposedly well-trained lay first aider, most of the time the ABD pad will wind up in the axilla. I am sure that you studied the anatomy of the axilla as a four-sided pyramidal space, but when the arm is apposed to the chest the space is simply not there any more. Any padding placed in the axilla becomes a very effective fulcrum for wedging out the upper fragment of a fractured humerus, and for compressing the brachial vessels and the brachial plexus against it. (Fig. 8)

I mentioned the need for a *single* volar splint in fractures of the forearm. The tradition is for two, one dorsal and one volar. If you inquire into another of the medical basic sciences—medical history—I believe you will find that this dates from the pre-plaster-of-Paris days of fracture treatment. In definitive treatment of a forearm fracture by board splints, two *are* required—to orce the forearm muscles down between the radius and ulna and prevent a disabling synostosis. One splint is quite enough for emergency work.

Perhaps you noticed that I did not mention elevation in the control of hemorrhage. True, elevation will help control venous and capillary bleeding, but this is not the real problem. How much help is elevation in arterial hemorrhage? Very little. In the first place, it is hard to make any arrangement to elevate the most difficult bleeders. Suppose you *can* elevate the wound—for example, the radial artery is severed at the wrist. If you lay the patient down, and raise his arm as high as it will go, elevation alone will not control the bleeding until the patient has bled down to below 50 mm. of mercury blood pressure. This is a simple matter of the mathematics of the specific gravity of mercury and blood, the conversion factor between millimeters and inches, and the length of the human arm and forearm.

Look again at sucking wounds of the chest. Am I either naive or careless in stating that a gauze dressing is an effective dressing? I think not. On what does the danger of a sucking chest wound depend? It is the relative ease with which air goes in and out the chest hole as compared to its transit through the normal airway. Have you ever thought of trying to breathe with a wet (bloody, that is) dressing tied firmly over your nose and mouth?

In connection with hemorrhage and shock I mentioned saline solutions, without hesitation or apology, and in the same paragraph with human blood, human plasma, and colloid plasma expanders. What kind of presumptuousness and overboard-expediency is this? During the study of surgery you have undoubtedly taken sober note of references to the effect that saline is of dubious and transitory value, "since it does not stay very long in the circulation." What is the circulation? Is it limited to the contents of the arteries, veins, and capillaries? Or is the circulation, on which the life of cells and organs depends, inclusive of all the body's fluid content? When you looked at the statement that saline is of transitory value did you forget your study of the physiology of hemorrhage? If you bleed an animal over a period of time the hematocrit of the latter part of the blood removed is much lower than that of the first. The animal compensates for blood volume loss by calling fluid into the blood stream. Where did this fluid come from, and was it serving any useful purpose there? Might it not be that the animal would benefit greatly if we could give back to him some fluid that he could leak back the other way? Further, in any type of shock there is usually continuing fluid and blood volume loss—either through the wound, or into damaged tissue. Extra saline will help the animal compensate for this loss. Yes, saline solutions do "leak" from the vessels, but this leakage is no bad thing. And the effect of saline is by no means transitory. If you give enough saline solution to a severely bled-out animal you can change the altered values of circulatory dynamics (such as blood pressure, A-V oxygen difference, and cardiac output, but not hematocrit or hemoglobin) back to nearly normal, and they will stay at the improved values for 16-18 hours. But it takes really large doses before saline begins to take peerage with plasma. Every experimenter is hesitant to go on record with definite figures when he is extrapolating to humans from laboratory data, but I am forced to give some definite figure as to what is "really large." The situation is somewhat comparable to the marketing of olives, which come in six sizes larger than large: extra large, mammoth, giant, jumbo, collossal, and supercolossal! If you are going to use saline solutions alone in the treatment of severe shock, the quantities must be supercollossal. Five or six liters is not enough; it takes about 150 ml per kilogram; 15 per cent of body weight; 10 or 11 liters for an average adult!

If you should become convinced of the value of saline solutions, or if you are forced by default to use them in spite of skepticism, do not forget the value of the oral route. Unless the patient is in fairly profound shock, he can take and retain oral fluids. The standard solutions in current use are lactated Ringer's solution; and a mixture of sodium chloride and sodium bicarbonate, which apparently goes back to Haldane. In my private opinion, both of these solutions taste outright awful, and I cannot swallow and keep down even one liter, much less ten. But we have just completed some work which indicates that more palatable solutions are quite feasible. We now have one which fizzes like champagne, has a tang like ginger ale, and a flavor so good that my children will drink it for an afternoon snack. I personally am able to take and retain several liters at a time. And when I give it to fatally burned mice, it salvages as many or more of them than does Haldane's solution and lactated Ringer's.

The science and art of medicine is the guide to emergency treatment, whether that treatment is given from a tin cup, or a sterile intravenous set, or whether the treatment is given in a well-equipped hospital, or in the crudest of roadside circumstances. Suppose you are invited next Christmas to go duck-hunting with one of your undergraduate classmates from Baton Rouge. He has prospered in the insurance business while you are starving your way through medical school. He has an airplane, and he uses it to commute to his well-equipped hunting and fishing houseboat camp on Lost Lake in the Louisiana marshes. The two of you tell your wives: "Don't look for us back soon; if the ducks are flying we will stay gone a couple of days."

On landing, your friend flats out too high; the plane crashes, burns, and sinks in the lake. You have time to get him out, but he is badly burned over the lower body; his right arm is a mess, and the ulnar artery is severed just below the bifurcation of the brachial; his left chest is stove in, with an open pneumothorax; he has a penetrating wound over the pubis, that probably goes into the bladder; he is comatose and cyanotic, but still has a pretty good blood pressure.

You have been to the camp before, and you know that the cabinets in the kitchen are likely to contain some ulcer medicine, adhesive tape, and some shotgun Asian Flu remedies, but no blood, plasma, oxygen, or syringes. Nevertheless, if you cannot preserve this man's life over the next 48-72 hours before the sheriff comes flying down to look for you, you have missed out on a lot they were trying to teach you during your first two years in medical school.

You clamp one hand on the right arm, with the thumb compressing the brachial artery against the humerus. With your other hand you stuff a handkerchief into the hole in the chest, and roll the patient over with the left side down. Then you put a tourniquet on the right arm, roll him back over, and bind up the chest tightly. Then you do a tracheotomy with your penknife, inserting as a tube something trivial like the outer sleeve of your new plastic duck call. Then you put him left side down again, and tie off the ulnar artery with a piece of eight-pound braided silk fishing line. You splint the upper extremity. You take the polyethylene tube which your friend used for siphoning gas, and cut off a four-foot and a two-foot length. After flaming to round the ends, you put one in as a urethral catheter, and the other as a nasogastric tube.

You go to the kitchen cabinet, put nine tablespoons o salt and nine tablespoons of soda and all the penicillin and tetracycline tablets and troches you can find into a three-gallon bucket and you fill it up with water. Then you start putting the solution down the stomach tube—about six quarts in three to six hours, the rest in 12-18 hours. Then you sit back, watch the urine drip from the catheter, and pray.

When the sheriff comes, your patient will be alive. This, to my mind, is the practice of medicine, not first aid.

Medical Center Miscellany

Bringing the psychiatry department faculty up to six members, Dr. L. C. Hanes, Jr., joined the University Medical Center staff May 1 as an assistant professor.

He came to the University from Browne-McHardy Clinic in New Orleans, where he had been a staff psychiatrist for the last year after having been on the Veterans Administration hospital staff in New Orleans.

Dr. Hanes graduated from Texas Tech and got his M.D. degree from the University of Texas Medical Branch in 1944. He interned at the U. S. Naval Hospitals in Shoemaker, Calif., and Aiea Heights, Hawaii, returning to the University of Texas in Galveston for his residency training.

He is a member of the American Medical Association and of the American Psychiatric Association.

Other psychiatry department faculty members are Dr. F. J. Moore, professor and chairman; Dr. Oscar Hubbard, professor, Dr. William Gillen, assistant professor who is also acting chief of the division of neurology, Dr. Niles Newton, assistant professor, part-time, and Dr. Roland Toms, associate.

Alpha Omega Alpha

As the school year draws to a close, academic achievement takes the spotlight with special honors and awards being announced.

On May 16, Mississippi Alpha chapter of Alpha Omega Alpha honor medical society, installed at the University Medical Center last year, initiated eight members.

Dr. Curtis P. Artz, associate professor of surgery, was tapped as an honorary member. Student initiates were: Russell E. Morris of Jackson, Arthur Lindsey of Cleveland, Bobby Jennings of Lambert, Dennis Magee of Tylertown, all seniors; William F. Lynch of Jackson, Norris Knight of Jackson and Charles Sledge of Sunflower.

Morris also received the first $100 Student Scientific Award given by the local AOA chapter. His winning paper was entitled "Cellular Events in Acute Obstructive Pancreatitis as Observed in the Living Mouse Pancreas."

Dr. David M. Hume, professor of surgery and chairman of the department at the Medical College of Virginia, delivered the initiation address at a dinner in the King Edward Hotel.

A junior AOA initiate, Charles Sledge, was presented the Roche award, a watch and scroll, which goes to the student with the highest scholastic average covering his first two years in medical school. Sledge also got a Mosby award for scholastic achievement.

Other Mosby winners are Morris Jennings, Robert L. Nix of Winona and Kelly S. Segars of Belmont.

The Sandoz prize, their "Atlas of Hematology," went to the 12 top-ranking seniors. They are: Miss Walterine Herrington of Union, James Graham of Richton, Magee, Jennings, Nix, Bill Eure of Hattiesburg, Robert McKinley of Jackson, Russell Cannon of Bruce, Jeff Hodges of Lucedale, Haynes Heslep of Indianola, Morris and Lindsey. Announcement of the Leathers Medal award is made during the commencement exercises.

Fifty-Year Club

Members of the Mississippi State Medical Association Fifty-Year Club met for lunch with Dr. D. S. Pankratz, dean of the medical school, at the University Medical Center during the May state association meeting. Thirty members were present.

Medical Alumni Officers

Dr. James Grant Thompson of Jackson was elected president of the Ole Miss Medical Alumni at a dinner meeting in Jackson on May 14. He succeeds Dr. Ashford Little of Oxford. Dr. Robert Massengill of Brookhaven was named vice-president. Rapidly developing into an effective organization, the Medical Alumni association draws most of its members from medical certificate alumni for whom class agents have been appointed.

Get Fellowships

Two of the school of medicine's first graduates, Dr. Talbot McCormick and Dr. Campbell Gilliland, have received residency training fellowships.

Dr. McCormick, who was awarded the first Leathers Medal, has received a $1,000 Meade Johnson award for graduate training in general practice. He'll take his G. P. residency at Huey P. Long Charity hospital in Pineville, La.

Dr. Gilliland will complete his internship at the University Hospital July 1 and will remain there as a pediatric resident on a $4800 Wyeth Fellowship covering two years.

INTERPRETING MEDICAL LITERATURE

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HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

An Evaluation of the Serum Glutamic Oxalacetic Transaminase Activity in Pericarditis

By: Robert B. Kalmansohn and Richard W. Kalmansohn, Department of Medicine, University of California Medical Center, Los Angeles, Calif.

The serum transaminase has been studied extensively since 1939, and after a simple photometric method for its determination was described in 1955, it assumed considerable clinical importance. Nearly all the investigators have agreed as to the value of the serum transaminase levels in myocardial infarction, and most of the literature suggests that a difference of diagnosis can be made between myocardial infarction and pericarditis on the basis of serum transaminase levels. However, an occasional case of pericarditis is reported in which the serum transaminase level is high, and these authors report seven consecutive cases of pericarditis, five of which were cases of nonspecific pericarditis and two of which were cases of myocardial infarction complicated by pericarditis. Six of the seven patients had elevated serum transaminase level and in four of these patients the maximum level was below 75 units but in two the levels exceeded 100 units and were well within range of levels seen in patients with transmural myocardial infarction. This clinical impression is reinforced by adequate experimental bases, as pericarditis produced in dogs by talc and cultures of alpha Streptococcus produced rise in SGO titres to a significant degree. Experimental data suggested that the SGO titre was only of value in differentiating acute myocardial infarction from pericarditis if the levels were within the normal range.

Undoubtedly the subepicardio-myocarditis occurring in pericarditis produces the changes in electrocardiogram and, without doubt, produces the elevation in serum transaminase. When more cases of pericarditis are followed closely, we will probably see more cases with elevated serum transaminase levels.

Comment: It has been my impression that not only the level of serum transaminase might distinguish two conditions, pericarditis and myocardial infarction, but that the speed of the rise is of some help in differentiation. Serum transaminase levels in definite myocardial infarction begin to rise as early as the fourth or even sixth hour, and in most cases by the end of twelve hours definite elevations have occurred. In none of the cases of pericarditis that I have seen, even with extensive involvement, have serum transaminase levels been secured early enough. The history of pericarditis is that of an upper respiratory infection progressing into a picture of so-called pneumonia or bronchitis or pleurisy, and by the time the physician sees the patient the most acute stage of subepicardio-myocarditis has already passed. Possibly, if pericarditis were an acute, dramatic event, such as myocardial infarction, earlier levels would be secured and undoubtedly more pericarditis would be seen with increase in SGO titres.

PEDIATRICS

The Management of Hemangiomata: A Plea for Conservation in Infancy. H. M. Blackfield, F. A. Torrey, W. J. Morris and V. B. A. Low Beer. Plast. and Reconstruct. Surg. 20:38-44 (July) 1957 (Baltimore).

This study adds to the previously reported evidence that hemangiomas and nevi presenting at or soon after birth frequently undergo complete or nearly complete spontaneous involution over a period of a few years, the great majority disappearing by five years of age. The authors examined 685 patients with various types of hemangioma, many of whom had multiple lesions. Two hundred twenty-five of these patients received no treatment, and most of the lesions spontaneously involuted or are going through the various stages of involution. Patients treated earlier by other methods showed the same type of involution as did those receiving no treatment, casting doubt on the effectiveness of some forms of treatment. The authors concluded that spontaneous regression of the most common hemangiomas of infancy and childhood must be accepted as a fact. In some cases involution may progress slowly, while in a small percentage regression does not occur. If surgery is to be carried out early, due to family pressure, one should wait until involution has started so that a more conservative excision can be carried out. If surgery can be delayed until the preschool age, most lesions will have disappeared. The large lesions which have undergone a few years of involution present a much more simple surgical problem. Any radical method of treatment which may damage normal tissue or prevent its growth should be rejected.

Comment: Our experience has been similar to the authors. We would urge that their suggestions relative to the treatment of these cases be carried out. Certainly many cases have been treated that would have completely subsided in time.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

INFORMATION HANDBOOK READY

The Handbook is being distributed free to all members of the Mississippi State Medical Association. Printing of this volume culminates three years of work by the committee composed of Wm. E. Lotterhos, chairman, and S. K. Johnson and S. S. Kety.

It contains information about Mississippi laws pertaining to medical practice, adoption, hospitals, and welfare agencies. Also included are facts about the AAGP and AMA and their constituent chapters in Mississippi.

Our thanks go to the committee for preparing this gold-mine of information for our use. Thanks also to Wyeth Laboratories, Inc., for their generous support of the project. Extra copies of the Handbook are available for $1.50 per copy.

LUNCHEON SUCCESSFUL

The Academy luncheon held during the recent MSMA session was a big success, with 64 members and guests in attendance. The new AAGP movie depicting highlights of 10 years of Academy growth was shown.

M. S. M. A. OFFICERS

Mississippi Academy members, as usual, were elected to several important positions in MSMA. Guy T. Vise, MAGP director from Meridian, assumed the presidency. Congratulations and good luck! Wm. E. Lotterhos, Jackson, was chosen to serve a three-year term as secretary-treasurer under the newly adopted Constitution and By-Laws.

Other MAGP members elected were: George Townsend, Forest, and Frank Massengill of Brookhaven, vice-president; associate editor, Moncure Dabney, Crystal Springs; trustee, N. C. House, Batesville; Council on Medical Service, George Hicks of Pascagoula; Judicial Council, Lamar Bailey, Kosciusko, and A. T. Tatum, Petal. Council on Socio-Economic Affairs, Mal Riddell of Winona; Council on Constitution and By-Laws, John B. Howell of Canton.

SEPTEMBER ASSEMBLY

It isn't too early to start making plans to attend the Mississippi Academy's annual session in Jackson. The dates—September 17 and 18.

MISSISSIPPI HEART ASSOCIATION

An "emergency" identification card for the protection of patients on long-term anticoagulant therapy is now available to physicians from the Mississippi Heart Association, says Dr. Wesley Lake of Gulfport, president.

Designed as a wallet insert, the card points out that the bearer is being treated with anticoagulants which slow down clotting of the blood. The card advises that a doctor be called in case of emergency, bleeding, injury or illness, since the patient may require an antidote.

Space is provided for the name of the individual's physician, his address and phone number and for the kind of anticoagulant prescribed and the patient's blood type. The card was designed with the approval of the Committee on Prothrombin Determinations of the American Heart Association.

Dr. Lake, installed as MHA president in April, points out that this card is but one of the many services the Mississippi Heart Association offers to assist the physician with the management of his patients.

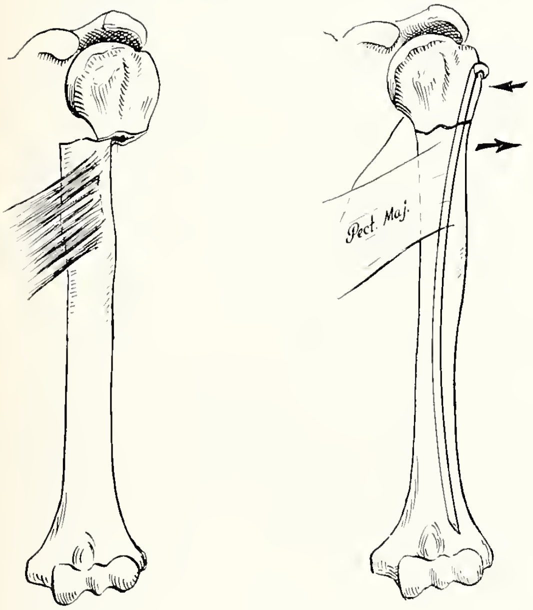
A complete list of available pamphlets for patients and professional literature and films may be requested from the Mississippi Heart Association in Jackson.

Fracture Problems

Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 22 of a Series

THE HUMERUS



TRANSVERSE NECK FRACTURE

Pectoralis major pulls shaft medially. Pin (one-eighth or three-sixteenths inch diameter) resists this pull by exerting three-point pressure.

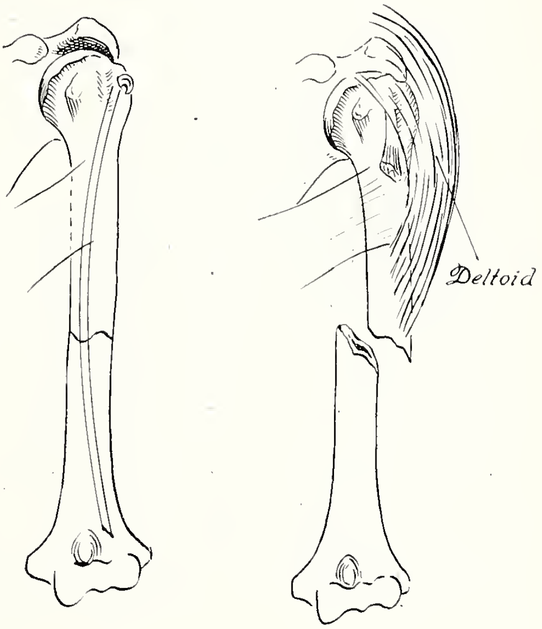
The pin is introduced through the supero-lateral surface of greater tuberosity. Operation often done as a closed procedure.

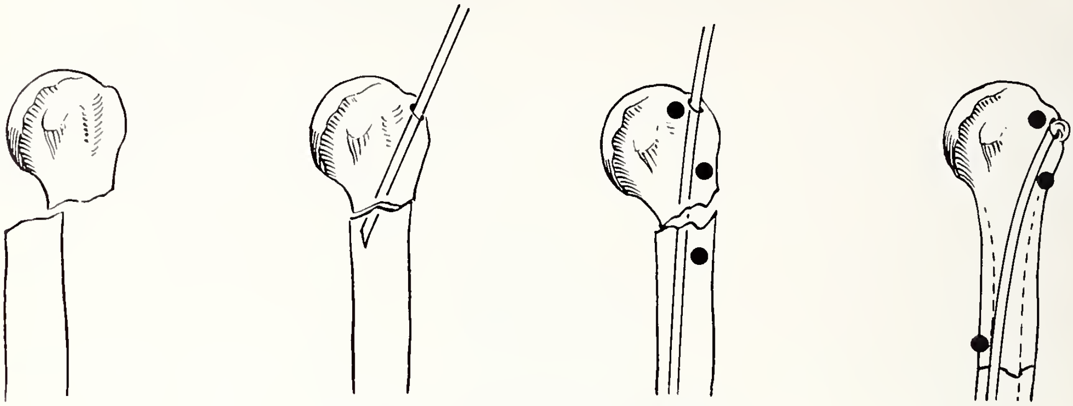
SHAFT

Slightly curved pin gives best fixation. Diameter: one-fourth inch or three-sixteenths inch dependent upon size of marrow cavity. Small antero-lateral incision to admit one finger for manipulation. Carefully avoid distraction. Cast rarely necessary.

BELOW DELTOID INSERTION

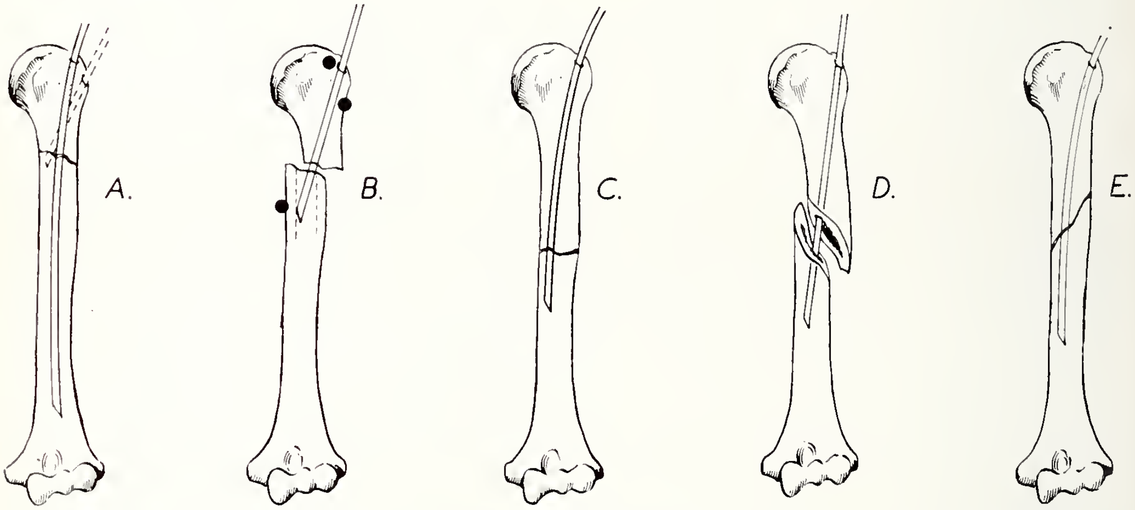
Oblique fracture this direction tends toward distraction and shear. Obliquity in opposite direction gives compression and stable fixation. Pin must be curved.





SHORT UPPER FRAGMENT

Pin introduced obliquely in short upper fragment produces angulation as it conforms to axis of marrow cavity. Longer fragment does not angulate because three-point pressure forces pin into curve deflecting point at proper angle into medullary canal.



SHORT DISTAL FRAGMENT (Angle of Insertion) (Direction of Obliquity)
OTHER FACTORS

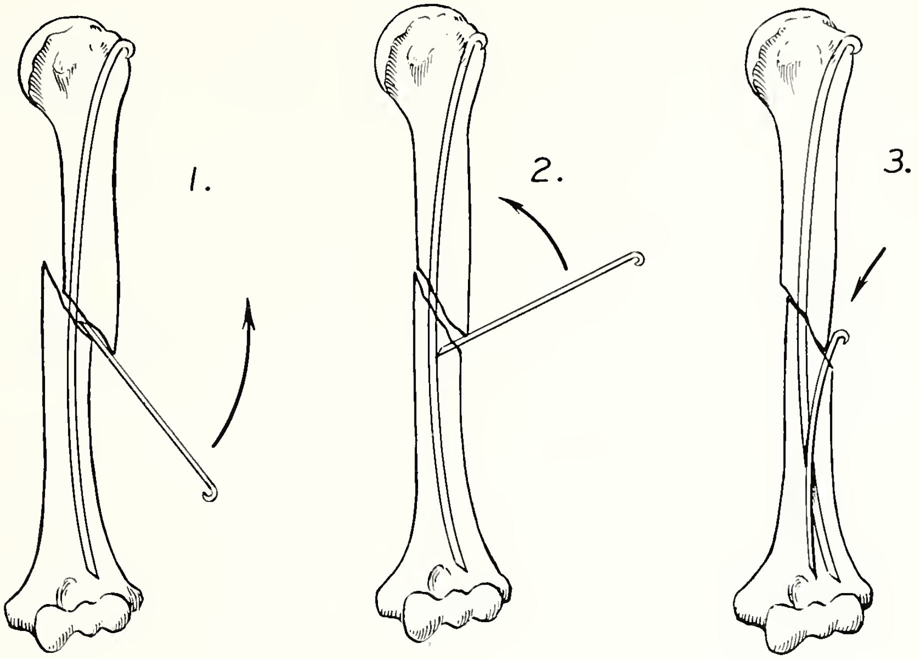
(A) Correct angle of insertion.

(B) Bad: Wrong angle of insertion in short fragment.

(C) Good: Curved pin, good angle of insertion, long upper fragment, irregular fracture line—excellent fixation.

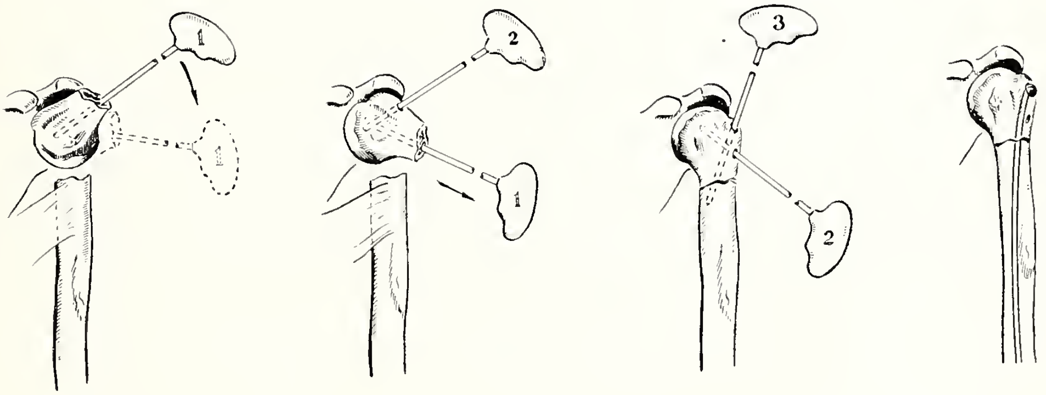
(D) Bad: Oblique fracture below deltoid insertion. Straight pin introduced at improper angle gives distraction and angulation.

(E) Good: Note direction of obliquity. Fixation stable with firm bone compression.



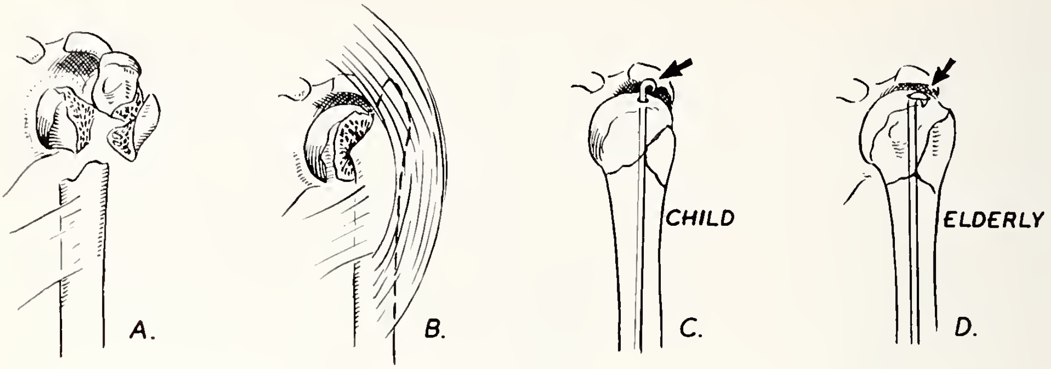
CHECK LOCK

THE PROBLEM: Unstable short oblique fracture, large medullary canal. Tends to non-union because of shear, distraction and rotary stress. This simple leverage trick can stabilize the fracture and produce contact compression of the bone ends.



ABDUCTED HEAD

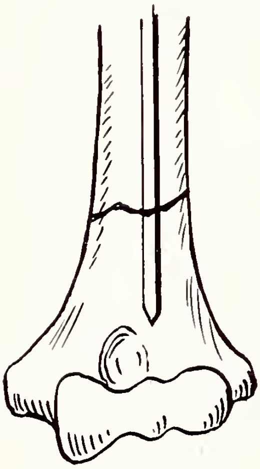
Method of manipulating the head into position through a small incision using two small awl-reamers.



COMMINUTED HEAD AND NECK

(A) Bag of bones may require excision of fragments.
(B) Oblique fractures with angulation usually best treated with hanging cast. If pin is used it must be passed through the head.
(C) In children leave the head of pin high to simplify removal.
(D) In the elderly, if the pin is not to be removed, countersink head of pin so that it will not interfere with early shoulder motion.

SHORT DISTAL FRAGMENT



Fixation is usually satisfactory if medullary cavity is one inch long. Ream canal in distal fragment if necessary. Double pins might be driven upwards from condyles, instead. Hanging cast might be necessary.

HANGING CAST

Casts are seldom necessary in the pinned humerus.

Neck Region: Healing is usually rapid and fixation is stable so far as active motion is concerned. Passive rotary motion can disturb fixation. Lateral x-rays should be made through the chest and not by forcing the humerus into external rotation. Early circumduction exercises are helpful.

Shaft: Fractures of the shaft can usually be securely locked by the pin so that external sprinting is not necessary.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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LEADERSHIP

Someone has said that a leader is a man who has something, has started somewhere with it, and is able to carry some others along with him.

DR. VISE HEADS MSMA

Dr. Guy Vise of Meridian is the new president of the Mississippi State Medical Association. He is a general practitioner in medicine and surgery, qualifies well for the Academy of General Practice. He has been very active in organized medicine, enjoys a large practice, and is keenly interested in all human affairs that make for a better community and state. The state association should go forward in safety under his leadership.

DR. HILL ELECTED PRESIDENT-ELECT

Dr. Stanley Hill is now president-elect of the Mississippi State Medical Association. He lives at Corinth, the gateway to the great state of Mississippi on the northeast. Dr. Jim Hill, his father, the beloved, served as president several years ago. Dr. Stanley has been very active in organized medicine across the years. He has been outstanding as speaker of the house of delegates. He is worthy and well trained for the presidency of the association.

The new secretary of the Mississippi State Medical Association is Dr. William E. Lotterhos. He has a keen appetite for work, is able and accurate. He is outstanding in organized medicine in Mississippi.

GOOD STATE MEETING

The state meeting was unusually good in many respects. The Section on Surgery was one of the best we have attended anywhere at any time. Dr. James Hardy, Professor of Surgery at our Medical School, was chairman of the section, and it was well planned and expertly executed. The Section on Obstetrics and Gynecology had also a most informative and interesting innovation, Dr. Walter H. Simmons, chairman.

Medicine in Mississippi is progressing significantly and it is easy to see that our four-year school is contributing in no small degree to this growth. Loyalty and pride are our just debt of gratitude.

HONOR TO DR. UNDERWOOD

On June 23 in the Victory Room of the Heidelberg Hotel, Jackson, Mississippi, there will be a celebration of historic importance. Dr. Felix J. Underwood will be honored with a recognition dinner. Mr. Clayton Rand will be the speaker, and friends are expected to gather from all parts of the state. Dr. Underwood has witnessed one-half of the march of medicine since its beginning with now more than fifty years service. He did general practice for awhile and then was chosen executive secretary of the State Board of Health. His name is known around the world.

The service he has rendered will be a monument to him down the ages. The people of this state attest to a health program second to none. Theirs has been life and life more abundant.

When we honor Dr. Felix Underwood we honor ourselves. Few men have shown greater devotion to a noble cause. His devotion has been augmented by outstanding native organizing ability and by constant and sustained study in the field of public health. He has been a great friend to the medical profession. Few men in medicine have seen the interdependence of public health and medical practice as clearly as he. He has not shirked his duty as a citizen, nor failed to build friendships in and out of medicine which have reflected great favor upon his state.

It will be a privilege to join in the Underwood celebration.

. . . THE WORLD OVER

In response to our plea for a September, 1949, journal for our depleted files, a good doctor friend responded, as did Miss Louise Williams, Mississippi State Board of Health librarian. In her nice letter which accompanied the gift, she told us of a practice which libraries engage in to help one another keep up their files. She wrote:

"We, of course, feel a little responsibility in seeing to it that good journals are placed where they can continue to serve and that is why we find it so helpful to participate in the Medical Library Association Exchange. We receive so much from this source which we request each month with no obligation other than reimbursement of postage to the donor. In return we reeiprocate about once every year or so by offering our duplicates. On our last offering we sent a total of 2500 items to 160 libraries in this country and abroad. This altruistic activity has a wonderful effect on strengthening medical libraries the world over."

We commend Miss Williams and her staff for the excellent work that has been done through her library through the years. The above expresses somewhat the fine dedication that has characterized the work of this librarian in all her services to physicians in her own state and elsewhere.

FIFTY YEARS OF SERVICE

You will note in this issue the announcement of the celebration of the 50th anniversary of the Wallace Hospital in Memphis on June 14. To them we wish to offer our most cordial eongratulations. This institution has served well and is just now in the beginning of a bigger and better day. The mentally sick are occupying over half of our hospital beds now. The importance of prevention and treatment in this field can not be overestimated. The stigma of mental illness is disappearing but the challenge of its cure is multiplied.

News and Comment

MISSISSIPPI STATE MEDICAL ASSOCIATION OFFICERS FOR 1958-59

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DISTRICT VII AMERICAN COLLEGE OB-GYN TO MEET IN SEPTEMBER

District VII of the American College of Obstetricians and Gynecologists will be held in Jackson, Mississippi, September 12 and 13, 1958.

The program will begin with a fellowship hour on Thursday evening, September 11. The following day will be given to a scientific program of papers, round tables, and movies. Plans are also being made for the ladies' entertainment.

The place of meeting will be the King Edward Hotel.

MEDICAL PROGRESS ASSEMBLY

The first annual meeting of the Medical Progress Assembly will be held at the Tutwiler Hotel, Birmingham, Alabama, September 7, 8, and 9,

1958. Sixteen of the country's outstanding medical authorities will appear on the scientific program.

The Assembly is sponsored by the Birmingham Academy of Medicine.

NURSING SCHOOL AT BOONEVILLE WELL UNDER WAY

The nursing students of the Northeast Mississippi Junior College, Booneville, Mississippi, have completed their first year of work which was primarily academic and have now entered into the clinical phase of their training at the Northeast Mississippi Hospital. At a reception given at the Hospital May 26, 1958, the officials of the college and the hospital indicated their satisfaction in the operation of the nursing school.

This is the first effort in Mississippi of a junior college operating a nursing school. It has many advantages over the hospital school in that education of nurses now takes its rightful place in our educational system. This is a three-year course and when students have satisfactorily completed their work they will receive an Associate of Arts degree from the junior college and will be eligible to take the state board examination to become a registered nurse. The course seems to have more appeal to the students than the hospital school because it is a part of the college system.

Recruitment is thus far easy; the next session class is already filled. The recruiting forces of the college play a big part in the popularity of the course. It is expected that eventually about twenty students will be enrolled at the beginning of each college year.

WALLACE HOSPITAL CELEBRATES HALF CENTURY

On June 14, the Wallace Hospital, Memphis, Tennessee, will celebrate its 50th anniversary.

The Wallace Hospital has a half-century of service. It was established by the late Dr. W. R. Wallace, who was a pioneer in the field of psychiatric treatment.

The Wallace Hospital is located on a 12-acre tract, 10 miles from downtown Memphis, with a 50-bed capacity. Today, the two sons of Dr. Wallace carry on this work, adhering to the theory originally designed and carried out by their father, to keep the hospital small enough that individual care could be stressed and a close relationship be established with both patients and their families.

The guest speaker will be Rabbi James A. Wax, who has long been interested and actively engaged in the state's mental health program.

A buffet supper will be served on the lawn outside the hospital.

FIFTY-YEAR CLUB

The Fifty-Year Club had a nice meeting at the state meeting at the Medical Center with Dean Pankratz as host. The club has a fine host just waiting for next year at Biloxi.

Dr. W. R. Hand of Philadelphia was the last to receive a fifty-year pin. A fine ceremony was held at his home and his own son, Dr. C. R. Hand, presented it. We are sure it was a lovely and impressive occasion with close friends, relatives, doctors and ministers present.

ANNOUNCEMENTS

Dr. L. C. Hanes, Jr., formerly a psychiatrist with the Browne McHardy Clinic, New Orleans, La., has been named an assistant professor of psychiatry at The University of Mississippi School of Medicine, effective May 1. Dr. Hanes received his M.D. degree from Texas Technologic College, Lubbock, in 1944 and interned at U. S. Naval Hospitals in Shoemaker, Calif., and Aiea Heights, Hawaii. His psychiatric residency training was received at the University of Texas Medical Branch, Galveston, Texas.

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The University of Mississippi School of Medicine, Jackson, has scheduled three postgraduate courses for physicians in June. They are Abdominal Surgery, June 11 and 12; Obstetrics-Gynecology, June 18 and 19, and Internal Medicine, June 25-26.

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Major General William E. Shambora, commanding general of Brooke Army Medical Center, Fort Sam Houston, Texas, will deliver the graduation address at The University of Mississippi's second Commencement June 8 in Jackson. Candidates for doctor of medicine degrees number 44 as against 24 in the school's first graduating class last year.

Woman's Auxiliary

Mrs. Mayo Flynt

MERIDIAN DOCTOR'S WIFE HEADS AUXILIARY

Mrs. James Thompson President-elect

Poised, attractive Mrs. Mayo Flynt of Meridian accepted the gavel from the outgoing president, Mrs. A. E. Brown of Columbus, at the May meeting of the Auxiliary to the Mississippi State Medical Association in Jackson, to serve the state organization in the year ahead.

The new president comes to office well prepared in experience and ability for enthusiastic leadership. She lives a busy life, not only as a doctor's wife but also as a mother, civic leader, and club woman. A graduate of Delta State College, Mrs. Flynt plunged whole-heartedly into social, church and community life upon becoming the wife of Dr. Flynt. Golfing, garden and literary clubs claimed her talents until growing children drew her into Scouting and the Parent-Teachers Association, which she served as president. She served as sponsor of Beta Sigma Phi sorority in 1956, was a DeMolay mother in 1957, is a member of Junior Auxiliary and Family Service. She is also a past-president of East Mississippi Medical Auxiliary.

The Auxiliary looks forward to a year of happy sailing with Mrs. Flynt at the helm. She is already making up her schedule for visiting the various auxiliary groups over the state.

Lovely Mrs. James Thompson of Pascagoula is the president-elect of the organization.

DOCTORS' WIVES ENTERTAINED WITH PARTY IN WALDRON HOME

Members of the Woman's Auxiliary to the Mississippi Medical Association and visitors were beautifully entertained Wednesday morning, May 14, at a coffee party in the home of Dr. and Mrs. Willard L. Waldron at 4217 Crane Boulevard.

The hostesses, charming in pastel summer frocks, were Mrs. Waldron, president of the local Central Medical Auxiliary; Mrs. Lee Reid of Jackson and Mrs. Arthur E. Brown of Columbus, president of the state auxiliary.

Mrs. Waldron's home was decorated throughout with pink flowers accenting the dominant color note of its decor. Especially lovely was the coffee table, placed against the wide windows of the dining room, and graced by clear glass apothecary jars holding arrangements of pink peonies, carnations and stock. Bird-of-paradise was used in the family room, while the pink theme was continued again on the terrace where blooming pink caladiums grew in natural surroundings.

Receiving the large number of callers at the door were Mrs. George Owen and Mrs. H. C. Ricks, both of Jackson. Mrs. John M. Chenault of Decatur, Ga., national "Today's Health" chairman; and Mrs. Walker L. Curtis of College Park, Ga., Southern Medical Auxiliary, received with the three hostesses.

Mrs. R. C. O'Ferrall of Jackson presided at the guest register. Coffee was poured by Mrs. Mayo Flynt of Meridian, state president-elect of the auxiliary; Mrs. Guy Vise of Meridian, Mrs. Howard Nelson of Greenwood and Mrs. James Thompson of Moss Point, new president-elect.

Others assisting were Mrs. George E. Twente, Mrs. N. L. Gill Jr., Mrs. Thomas G. Ross, Mrs. Frank Donaldson, Mrs. W. F. Hand, Mrs. Lawrence Long, Mrs. F. E. McCullough, Mrs. Jack King, all of Jackson; Mrs. S. B. Platt, Mrs. W. L. Stallworth, both of Columbus; Mrs. S. Lamar Bailey of Kosciusko, and Mrs. Joseph B. Rogers of Oxford.

Mental health should have the interest and the help of every physician in the state as well as every other citizen. An illness that occupies half of our hospital beds certainly deserves our most active efforts.

The Relationships of Tobacco Use to Diseases of the Ear, Nose and Throat*

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SMOKING HAS BEEN both man's solace and his sorrow since the American Indian first gave him tobacco, no doubt in retaliation for his many acts of thievary, treachery, humiliating treatment and atrocities. If true, vengeance has been wreaked, not only on the third and fourth generations, but on all succeeding generations.

"Why does man smoke?" has been a question asked thousands of times but, as yet, no satisfactory answer has been given. However, among the reasons are: To relieve nervous tension, probably because the act of smoking diverts us by occupying the senses of smell, taste, sight and touch. To get a lift, probably because of the sympathomimetic action of nicotine. To prevent overeating, probably since smoking suppresses gastric motility, for it does not affect the blood sugar level. To appear grown up or sophisticated. To satisfy the atavistic oral craving to place things in the mouth. To occupy the hands in a social ritual. Or, perhaps the same reasons apply to smoking as my former professor of medicine gave for man's reason for drinking: to decrease the sorrows of this life, which are far too many; or to increase the pleasures, which are far too few.

Whatever the reasons for smoking might be, it is a habit that, once acquired, is seldom given up, indicating that tobacco contains a habit-forming drug, regardless of the contrary opinions now held. The alkaloid nicotine seems to be the most likely suspect, because small subcutaneous doses will alleviate the desire to smoke, and regular smokers can tolerate larger doses than non-smokers. Also, all smokers are willing to tolerate the unpleasant tars in tobacco in order to get the nicotine effect. Statistics have shown a marked increase in the consumption of tobacco in recent years, largely because of the increase in cigarette consumption. In fact, cigar consumption decreased and snuff, chewing tobacco, and pipe tobacco also diminished during the same period. Last year 441 billion cigarettes were consumed, an increase of 4 per cent, nearly a pack per person per day. Along with this increase there has also been a corresponding increase in many of man's woes, such as cancer of the lung, cardiovascular disease and many other less serious ailments.

The otolaryngologist is the first to see many of these cases because of the high incidence of symptoms referable to the air and food passages and, because of his special interest in the respiratory tract, the ears and eyes, and his general interest in medicine, it is most important that he familiarize himself with the problem as a whole and the early symptoms and signs of tobacco poisoning so that he can recognize, as well as treat and frequently prevent, serious diseases which may be impending.

For many years he has noted the fact that smoking was a factor in cough, hoarseness, sore throat, stuffy noses, nasal discharge, dizziness, deafness, visual disturbances and a host of other complaints. But, due to the fact that he smoked himself, that his leading medical journals accepted the blatant ads of the tobacco hucksters, (in which they claimed that their particular product soothed the throat and never produced a cough, how much less harmful one product was because of an infinitesimally smaller amount of nicotine, how beneficial the various lengths and filters were), and since these statements were attributed to various medical experts, who always remained unknown, and since the officers and members of our national medical associations allowed themselves to be lavishly entertained by tobacco companies, is it any wonder that the otolaryngologist was slow to raise his voice in protest and to realize he had been prostituted?

Reports of Ochsner[1], Graham and Wydner[2], Hammond and Horn[3], Doll and Hill[4], and many others presented such a serious indictment of smoking that we can no longer let our personal habits or beliefs influence us but must make an attempt to evaluate the whole problem so that facts can be ascertained for use in future advice to our patients. Such authorities as these stated that: Cancer of the lung now causes four times as many deaths in men and two times as many in women as it did twenty years ago; that last year it caused 25,000 deaths in this country; that any man past fifty years of age who smokes a pack a day has fifty times as much chance of lung cancer as a non-smoker; that of 700 cases of lung cancer only nine were non-smokers; that of 1357 men with cancer of the lung in England only one-half of one per cent were non-smokers; that for men who smoked a pack of cigarettes per day the death rate for heart disease and cancer as a whole was double that of non-smokers for certain ages; that, according to Bryant and Wood[5], smoking yields coronary spasm and anginal pain at times, and coronary disease develops before the seventh decade significantly more often in smokers than non-smokers. Statements like these mean it is high time that we change our casual attitude toward tobacco use and re-evaluate the whole problem for, if it was a factor in the 25,000 deaths from cancer of the lung and the 500,000 deaths from coronary thrombosis last year, it is certainly time for the medical profession to recognize and utilize the fact.

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What is tobacco? Avoiding any botanical discussion, I can say that there are some 2,500 grades recognized at this time; that of the four types used in cigarette manufacture, i.e., Burley, Maryland, flue-cured and Levantine, there are sixty-six grades of Burley alone; and that the leaf content of acids, carbohydrates, waxes and other components varies according to the position of the leaf on the plant stem, weather conditions, region of growth and cultural practices. The amounts of nicotine and tar containing portions of carbon monoxide, carbon dioxide, ammonia, aldehydes, arsenic, acrolein, formic acid, sulfural, glycerine, diethylene glycol, benzopyrine and the hydrocarbon combustion products found in smoke vary according to the type of tobacco, the rapidity and frequency of smoking and the plex chemical problem and, regardless of the amount of money and the number of research laboratories available, the substances harmful to man will not be quickly ascertained.

However, as far as its effects on the human body are concerned, they can be simply divided into those caused by nicotine, those caused by the tar portions—either irritative or carcinogenic—and those resulting from the allergenic properties of tobacco itself or smoke.

Nicotine is an alkaloid and one of the most toxic known, the intravenous lethal dose being from 60 to 120 mgm. Since the average cigarette contains about 22 mgm. the contents of approximately three cigarettes would cause death if injected intravenously.

Nicotine stimulates, then depresses the central and sympathetic nervous systems and the adrenal medulla. Its effects are similar to those of curare and muscarine.

The physiological effects of sweating, faintness, tachycardia, nausea and vomiting appear in non-smokers after one to six mg. of nicotine is injected subcutaneously. Larger doses are tolerated by regular smokers. However, in smoking a regular cigarette only about 21 per cent, or 4.5 mg., of the nicotine content enters the mouth and of this perhaps, 0.5 mg. is absorbed.

The physiological effects of nicotine from smoking one cigarette are: to increase the blood pressure an average of 15 mm. systolic and 10 mm. diastolic and the pulse from five to twenty beats per minute. It contracts the peripheral blood vessels for from a few minutes to one-half hour. Nicotine also causes anginal pain and an altered electro- and ballisto-cardiogram at times. It reduces vital capacity and chest expansion; reduces gastric motility and secretions; causes the posterior pituitary lobe to release an antidiuretic hormone similar to vasopressin, which constricts blood vessels such as the coronary. It aggravates cardiovascular disease. Thrombo-angiitis obliterans occurs more frequently and is more severe in smokers. The same holds for other types of peripheral vascular disease.

The only facts I have been able to find in favor of nicotine are that: Fortunately, there is considerable human variation in its effects. It does not retard growth and does not interfere with pregnancy. The milk content in nursing mothers does not harm the infant. It does not alter blood sugar levels and, finally, it does not act as a carcinogenic agent.

The effects of tar portions are much more obscure than those of nicotine. However, if they are divided into irritative and carcinogenic effects it helps somewhat to understand the problem although, of course, one merges into the other.

First, the mechanical effects of holding a pipe stem or cigar in one position in the mouth or a chew of tobacco or snuff in the same area causes a constant, low-grade, local irritation. This effect, in addition to that of tobacco itself, predisposes to epithelial changes characterized as leukoplakia or low grade epidermoid carcinoma.

Second are the more widely disseminated irritative effects on the mucous membranes of the nose, pharynx, tongue, larynx and lungs, characterized by nasal stuffiness and discharge; soreness of the mouth, tongue and throat; hoarseness from inflammation, edema or epithelial changes in the vocal cords[6,7]; and cough. These effects are aggravated if other diseases exist, such as allergic rhinitis, asthma, sinusitis or pharyngeal, laryngeal or pulmonary disease. This is particularly true in chronic infections and ulcerative processes. Of all the irritative effects caused by smoking cough is the most frequent.

These results are due to the various substances in tobacco itself, as well as to other substances created by combustion. The number of cigarettes smoked, rapidity of smoking, length of butt and type of tobacco must also be considered.

Does tobacco or tobacco smoke contain a carcinogenic agent? This is the question that has precipitated such a widespread furor recently among doctors, the public and the cigarette manufacturers for the rising trend of cigarette consumption and cancer of the lung has caused great concern. Dr. Alton Ochsner has estimated that one male smoker in ten or twelve will die of cancer of the lung by 1970 if the present trend is continued.

Dr. Raymond Pearl of Johns Hopkins University first drew attention to this trend in 1938 in his study of nearly 7,000 white men, divided almost equally between non-smokers, moderate and heavy smokers between the ages of thirty and fifty. He found that almost twice as many smokers died as did non-smokers by age seventy. Dr. Sidney Cutler, in a recent study, estimates that the risk of cancer of the lung alone is from five to fifteen times greater in the smoker than in the non-smoker. These two conclusions are in close accord with those of Hammond and Horn and Ochsner which have been previously quoted.

Enough evidence has already been accumulated to prove pretty well that the increase in cancer of the lung is not due to carbon monoxide nor to the various noxious fumes and dusts. The accusation of these factors by smoking medical men is probably another example of wishful thinking. Since painting the shaved backs of mice with tobacco tar produced epidermoid cancer in 44 per cent of the mice, as reported by Graham and Wydner, one must conclude that there is a carcinogenic agent in tobacco or its smoke. Further evidence to support this conclusion is: that the type of cancer found is predominantly epidermoid; that cigarette smoke is deeply inhaled; that if one smokes a pack a day for one year, a fifth of a gallon of tar is deposited on the mucous membranes of the mouth, throat and lungs; that pipe and cigar smokers do not inhale deeply so the incidence of cancer of the lung is less. The incidence is still less in those who chew tobacco or snuff. It seems that the carcinogenic agent is produced by combustion and must be inhaled over a long period of time in order to produce malignant changes.

In a study of 100 consecutive cases of carcinoma of the larynx at the University of Virginia Hospital it was found that it occurred three and one-half times more often in those who smoked a pack or more a day than in non-smokers and, since the smoke bypasses the larynx and is retained in the lung, the incidence of fifteen to one in the lung is further evidence that tobacco smoke contains a carcinogenic agent. Admitting that many smokers die of other causes, that some people are not susceptible to cancer and that they also vary in their tolerance and susceptibility to tobacco the evidence has accumulated to such an extent that it can now be said that it is up to the tobacco companies either to prove it is not true or to find and eliminate the harmful substances from tobacco. This would still leave the nicotine content and its harmful effects as the second horn to this dilemma.

Evidence so far presented does seem to indicate that there is a carcinogenic agent in tobacco smoke and that, when inhaled over a long period of time, it will produce cancer in a large percentage of smokers.

The nature of this agent is, of course, unknown but coal tar research has proved that some of the hydrocarbons resulting from combustion can cause cancer.

Druckery, of Germany, showed that hydrocarbons fluoresce when exposed to ultra violet light and, when captured by blowing smoke in a flask, he found that approximately fifty per cent of the fluorescent materials were higher aromatic hydrocarbons. However, if the smoke was first inhaled ninety per cent of the hydrocarbons were retained in the lungs. So, it is possible that they could be a factor in the production of cancer of the lung.

Studies by the Chemical Laboratory of the American Medical Association revealed that present-day filters remove only a portion of the nicotine and from ten per cent up to fifty per cent of the tars, at best, and offer no protection against the higher aromatic hydrocarbons. The best of the present-day filters is another cigarette. However, further investigation of silica gel—benzonite, diatomaceous earths and many other substances—may produce a more efficient filter but, first, the carcinogenic agent must be identified and removed by the filter before filters can be of any value in the prevention of cancer.

Other findings of the A. M. A. Laboratory were that denicotinized cigarettes contained one-half of the amount of nicotine of a regular cigarette but the same amount of tars. Low nicotine content Kentucky, type 31V, tobacco was found to be lower in nicotine content but higher in tars. So, as far as the physiologic effect of tobacco smoke is concerned it seems to make very little difference whether one smokes this brand or that, king-sized or regular, this filter tip or that filter tip, denicotinized or type 31V Kentucky. If only the tobacco companies would now omit reference to filters, medical tests and slogans and the doubtful testimonials of actors and singers as to the condition of their larynges after smoking, then, the doctor's efforts to induce his patients who present evidence of tobacco poisoning to quit smoking would be greatly simplified.

The amount of nicotine which enters the mouth from the different methods of tobacco use varies approximately from low to high in chewing tobacco, pipe, cigar and cigarette whereas the amount of tars which enter varies approximately from low to high in cigarette, cigar, pipe and chewing tobacco. Since one is the reverse of the other, perhaps, it would be best to revert to the snuffing habit which was so fashionable in the eighteenth century before the cigarette supplanted it in the early Victorian era.

In addition to the effects of nicotine and tars, tobacco or tobacco smoke itself may exhibit allergenic properties and cause a reaction in the peripheral vascular bed of a shock organ, such as the nose, bronchi, vascular system, eyes and ears. Such a reaction in the eye may cause amblyopia; in the ear, vertigo, tinnitus and deafness and in the brain, a vascular headache. No doubt, there is a histamine release in all these phenomena.

Tobacco, now, stands indicted but, not yet, condemned on all counts and the outcome is, no doubt, being carefully watched by the insurance companies for the rates may soon be higher for the man who smokes a pack or more of cigarettes a day.

"How can I stop smoking?" is the first anxious question asked by one who either wishes to stop because of a guilt complex or fear or by one who has been told to stop for health reasons, either apparent or impending. Unfortunately, there is no easy way. The personal decision must be reached calmly and coolly but, when once made, the sooner it is executed the better. The first three days seem to be the hardest but no compromise can be made. There is no such thing as tapering off. A benzedrine tablet in the morning and a sedative at inght may be helpful. One should not change his way of life or try to change those of his family or friends. He may carry and hold a match but under no circumstances light a cigarette for his companion. Recovery from smoking symptoms is usually prompt and pleasing. Your mouth feels better, your nose and head feel better, your cough disappears and your appetite is improved. These good effects at the time of blackest despair help to tide one over the period of severe tobacco craving and, as the weeks and months go by, desire finally leaves and you are free again.

Many suggestions have been offered to help: post-hypnotic suggestion, deep breathing when the desire to smoke asserts itself, the use of candy or chewing gum, the use of various tablets containing alpha lobeline sulphate, the use of mock cigarettes or cigars and, the most helpful in my experience, a nicotine-free tobacco extract in the form of a compressed tablet. This tablet gives the tobacco taste but is free of nicotine and, of course, carcinogenic smoke.

In conclusion, I can only say that one should not use tobacco; that if one is unable or unwilling to quit, then, he should use either snuff or a moderate number of cigars a day, without inhaling.

We doctors should be willing to set the example and to bolster our determination in this revolution let us consider the following facts in addition to those previously listed.

According to Dr. John R. Heller, of the National Cancer Institute, a non-smoker's chance of getting cancer of the lung is one in two hundred and seventy-five, a heavy smoker's chance is one in ten in this country and one in eight in England.

There were 25,000 deaths in this country last year from cancer of the lung, one per cent of the total. Eighty per cent of these deaths could have been prevented by not smoking cigarettes. Forty-two per cent of the adults now smoke cigarettes and consume nearly a pack a day per smoker.

The British are being warned by the following posters put out by the British Government, acting on the findings made by the Medical Research Council.

Smoking and Health

It is my duty to warn all cigarette smokers that there is now conclusive evidence that they are running a greater risk of contracting lung cancer than non-smokers. The risk mounts with the number of cigarettes smoked. Giving up smoking reduces the risk.

To All Smokers

There are now the strongest reasons to believe that smokers—particularly of cigarettes—run a greater risk of lung cancer than non-smokers. The more cigarettes smoked, the greater the risk.

An American study group composed of representatives from the National Cancer Institute, National Heart Association, American Cancer Society and American Heart Association concluded: "The sum total of scientific evidence established beyond reasonable doubt that cigarette smoking is a causative factor in the rapidly increasing incidence of human epidermoid cancer of the lung."

Youth should be warned of the dangers of acquiring the habit. Perhaps, the economic aspects of spending some fifteen to twenty dollars a month on cigarettes instead of gasoline will be a strong deterrent. Finally, if they succumb to the alluring appeals of the tobacco companies they will become enslaved too and in later life, no doubt, will feel as one of my colleagues feels who consistently says that he will not give up smoking because it is the one thing left to him that he can still do as well as he did many years ago.

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Effect of Hysterectomy on Young Women*

RICHARD J. FIELD, SR., M.D.
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Following the work done by Jacobs, Daily, and Wills of Baylor University College of Medicine on this problem, we were prompted to review our cases in a similar manner. It is our opinion that the uterus is present for reproductive purposes, which if lost due to disease, should be removed if symptomatic regardless of patient's age. We have not believed hysterectomy in this group would produce any serious consequences and this study was undertaken to evaluate our opinion.

METHOD OF STUDY

Since 1946, 332 hysterectomies have been performed in this clinic. Of this group 44 were under thirty years of age and this report is a complete follow-up of 27 of these young women. This group represents 13.2 per cent of our total number of hysterectomies, which in comparison with some clinics appears quite high. However, this reflects our opinion as to the management of these cases as expressed in the introduction. The questions asked were as follows: 1) Do you feel that your operation was worth while and are your symptoms relieved? 2) Has the operation affected your sexual life? 3) Are you concerned about having no future menstrual periods? 4) Are you concerned that you will not be able to become pregnant? 5) Do you have any hot flushes or extreme nervousness, and if so, do you take any treatment for these symptoms? These questions were asked of the patients just as stated and all interviews were conducted by one individual (RJF,Jr.).

RELIEF OF SYMPTOMS

Twenty-three patients were completely relieved of their symptoms, four were classified as poor results and are as follows: 1. A 30-year-old multipara for chronic pelvic inflammatory disease. Both ovaries were left in place. She complained of recurrent right lower quadrant pain and dyspareunia following surgery. Examination nine years following surgery revealed enlarged right cystic ovary. This was removed and patient now well and asymptomatic. We believe this cystic degeneration to have been caused by inadequate blood supply to the ovary. 2. A 30-year-old multipara operated for chronic pelvic inflammatory disease. Her right ovary was left in place. She was much improved since surgery but still has some pelvic pain. We believe this due to chronic oophoritis as the remaining ovary is tender, but not enlarged on recent pelvic examination. 3. A 28-year-old multipara who complained of persistent left lower quadrant pain. She was operated with a diagnosis of pelvic inflammatory disease with bilateral cystic ovaries. Both ovaries were removed. Examination revealed a normal postoperative pelvis. This patient has a very difficult domestic problem and is very unstable mentally. We do not believe all her symptoms referrable to her pelvis. 4. A 30-year-old multipara who was operated for chronic endometritis and salpingitis. Both ovaries were left in place. She now complains of pain in the lower abdominal quadrants. She lives in another part of the country, and we have not had the opportunity to re-examine her. Again as in 2) reported above, we believe pain due to either oophoritis or degenerative cystic ovaries.

EFFECT ON SEXUAL LIFE

There was decided improvement in nine of these cases. No change in sixteen and increased difficulty with intercourse in one. The latter is the same case discussed previously, 4) under symptom relief. There was no loss of libido in any of these cases and one reported definite improvement in libido. Of the nine cases with decided improvement, all had inflammatory disease and severe dyspareunia prior to surgery and it is our feeling that the surgery definitely produced the relief. There was no significant change in the amount of vaginal lubrication in any case and it is our feeling that the case with continuing dyspareunia will need bilateral oophorectomy in the future, if she will accept it, for chronic oophoritis.

AS REGARDS FUTURE PREGNANCY

Six patients out of our 27 expressed desire for more children. Only one in the entire group was a nullipara. At the time of interview it was not believed to cause any serious problem with any of these six patients.

VASOMOTOR DISTURBANCES

Eight patients reported no vasomotor symptoms whatever. Six patients reported mild, but transient symptoms. Six patients reported transient, but severe symptoms and seven reported persistent nervousness and flushes which have required endocrine substitutional therapy for relief. The following table shows the type of surgery performed upon each group:

1. No symptoms — 8 patients
   Ovary Status
   2 bilateral oophorectomy
   3 unilateral oophorectomy
   3 ovaries not disturbed
2. Mild transient symptoms — 6 patients
   3 bilateral oophorectomy
   1 unilateral oophorectomy
   2 ovaries not disturbed
3. Severe transient symptoms — 6 patients
   3 bilateral oophorectomy
   2 unilateral oophorectomy
   1 ovaries not disturbed
4. Persistent severe symptoms — 7 patients
   2 bilateral oophorectomy
   4 unilateral oophorectomy
   1 ovaries not disturbed.

The above information leaves us perplexed as to the value of leaving or removing the ovaries during this type of surgery. As one can readily understand there is no definite correlation whatsoever between these groups as regards whether or not the ovaries were disturbed. This leads us to three conclusions, 1) undoubtedly in these women there is some psychogenic overlay which cannot be accurately determined but definitely effects their postoperative symptomatology, 2) the age-old question arises as to whether or not the uterus has some definite endocrine function and 3) is the varying response of the adrenals to ovarian disturbance responsible. The answer to the above group of patients and the type of surgery done upon them seems to lie somewhere between these three possibilities. Even in the persistent severe group of patients, they all have been adequately relieved by substitutional therapy and we do not find this a contra-indication to the surgery. In comparison with the findings of the Baylor group, however, we find that our vasomotor symptoms were much more evident than were theirs which we cannot explain. This may be due to the inevitable variance in interviewing these patients, but we find a definite group of vasomotor symptoms in a very significant number of our patients.

DISCUSSION

From our study we tend to agree with the Baylor group that the more complete type of surgery is indicated in spite of the individual's age if the reproductive organs cannot perform this function. However, we did encounter more vasomotor difficulties in our study than they and we cannot correlate these disturbances entirely to the removal or not of the ovaries. It makes one wonder once again if the uterus may have some endocrine function and to desire a thorough study of the adrenal mechanisms in these with persistent symptoms.

Two of our failures are believed due to leaving in ovaries which are the source of chronic infection in an effort to prevent these vasomotor disturbances. From this study we are convinced that not only should the uterus be removed if diseased, but no efforts should be made to leave in place a diseased ovary as it will more than likely necessitate further surgery, and the removal of both ovaries does not by any means produce a severe problem.

SUMMARY

1. This is a follow-up study of hysterectomies performed upon women of 30 years of age and under.

2. The study involved interviews with these women regarding the operation and the changes it has produced.

3. It is our conclusion that pelvic surgery with the removal of both diseased ovaries should not be deterred because of age if reproductive functions have been lost.

4. The question as to possible endocrine function of the uterus is brought up again in view of the vasomotor changes occurring in spite of leaving in both ovaries.

5. The role of the adrenal glands in these cases is considered.

6. It is possible that psychogenic overlay may confuse the picture in evaluating these symptoms.

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What Should Our Present Attitude Be Regarding Carcinoma of the Lung*

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Inasmuch as the surgical treatment of cancer of the lung has been carried out successfully for about twenty-five years, it would seem to be an appropriate time to take stock as to what may be accomplished by our present approach.

In reviewing our cases at the hospital of the University of Pennsylvania from 1939 to 1956, we found that approximately 600 patients with cancer of the lung entered our institution. Forty-three per cent of this group showed evidence of inoperability without the necessity of exploratory thoracotomy and only 38 per cent of the group underwent pulmonary resection after having been explored. The operative mortality for all patients resected was 7 per cent and the five-year survival rate for all patients resected was 25 per cent. When one considers, however, that only 38 per cent of the entire group were submitted to resection, the five-year survival rate for the entire group was only 9 per cent. Only one patient survived five years following exploratory thoracotomy without resection. He survived five years without the benefit of any specific form of therapy.

While a 9 per cent five-year survival rate for the entire group is certainly not as high as we would like it to be, nevertheless a 25 per cent five-year survival rate for those patients resected is certainly worth working for and, in fact, these figures are quite similar to those for carcinoma of the stomach, for example.

It would seem obvious from these statistical data that if the diagnosis of carcinoma of the lung could be made earlier so that all patients could be submitted to resection, our five-year survival rate for the entire group could be tripled to a figure of 25 to 30 per cent. Perhaps the best survival data following pulmonary resection have been those collected by Dr. Edgar Davis in which it was found that the patient with asymptomatic carcinoma of the coin type undergoing resection had an 80 per cent chance of five-year survival. If it were possible to pick up all carcinomas of the lung in this stage, it would obviously be possible to increase tremendously our five-year salvage.

As a result of this type of thinking, there has been a tremendous effort on the part of the medical profession to increase the chances of cure for patients with carcinoma of the lung by an earlier diagnosis of the disease. One of the forms of bringing this about has been routine chest x-rays on all men, particularly over forty, perhaps on a six months basis, in order to pick up the lesion at an early date. Great efforts have been made by the Cancer Society to encourage patients with symptoms of the disease to report to the medical profession as early as possible and also great efforts have been made in an educational program to get the medical profession to pursue the diagnosis as quickly as possible on the patients who submit themselves with symptoms. In addition to this effort to increase the five-year survival rate, the surgeon has made greater efforts in trying to accomplish the same thing by increasing the scope of his resection so that at times portions of the chest wall, diaphragm, pericardium or other structures in the mediastinum have been resected in an effort to get around the tumor. So far, it probably has not been demonstrated that extension of the surgical procedure is going to make any great difference in the over-all salvage of patients with carcinoma of the lung, but it is certainly hoped that the increased efforts on the part of the medical profession at large will increase the number of patients who come to early operation and thereby add some to the salvage.

I would be the first to admit that if every patient went to his doctor at the very first symptoms and if every doctor made the diagnosis upon the first visit and the patient was immediately submitted to operation that we could not hope to get anywhere close to 100 per cent cure with cancer of the lung. I have had the unhappy experience of operating upon a patient before he had a symptom of any sort of cancer of the lung, only to have him die of metastasis within a matter of a few months. I have had the experience of operating upon a number of patients within a matter of two or three weeks of the very first symptoms, only to find the lesion entirely unresectable and, as a matter of fact, it is not at all uncommon to find the very first symptom of cancer of the lung to be produced by the metastatic lesion rather than by the primary lesion itself. Indeed, 7 per cent of the series of patients who entered the hospital of the University of Pennsylvania did so because of a neurologic complaint due to metastasis to either the brain or a major nerve.

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*Presented before the sixty-ninth annual session of the Mid-South Postgraduate Medical Assembly, February 11-14, 1958, Memphis, Tennessee.

Fortunately, all of these lesions do not act alike and we have seen some where the cancer obviously moved slowly and considerable time was allowed for the clinician to make the diagnosis. I have one patient, for example, who had hemoptysis for a three-year period while in the Army and was studied very carefully without a diagnosis being made. One year after discharge from the Army or four years following his first hemoptysis, a small coin lesion was found in his right lower lung field. He was treated as a patient with tuberculosis for an additional year, so that I operated upon him five years after his first symptom. At that time the lesion still seemed to be early and he has now gone for almost ten years following his resection. Another patient came to our hospital with hemoptysis, was carefully studied and no lesion found, although the hemoptysis obviously came from the right upper lobe. He was followed by serial films and repeated bronchoscopies for two years before the lesion finally appeared in the right upper lobe at which time it was resected and still appeared to be an early lesion. He also has gone on for a five-year cure. This simply demonstrates that some cancers of the lung move rapidly, metastasize rapidly and kill the patient relatively rapidly, whereas other cancers of the lung move slowly and are not nearly so likely to metastasize.

In an effort to review this obvious difference in types of tumors, many pathologists have gone over them from the standpoint of cell type. There can be no question that there is considerable difference in cell types and that the prognosis of the patient with an epidermoid carcinoma of the lung is much better than one with an undifferentiated carcinoma of the lung. Nevertheless, there still seem to be tremendous variations among the patients with the same cell type. Several years ago, Dr. Fred Collier, who was at that time one of our surgical pathologists, reviewed our series of patients from the standpoint of the phenomena of blood vessel invasion by the tumor cells. It was his thought that the demonstration of blood vessel invasion in the surgical specimen might correspond with the presence or absence of metastasis outside of the lung and might offer a much better prognosis from the standpoint of what would happen to the patient, as well as give us an explanation of the great variability of the course of patients with carcinoma of the lung. In our series of patients, he found that 75 per cent of the resected specimens showed blood vessel invasion by the tumor cells, whereas 25 per cent did not. Blood vessel invasion is much more common in certain cell types than others. For example, 100 per cent of the patients with undifferentiated carcinoma showed blood vessel invasion, whereas only 63 per cent of epidermoid carcinomas had blood vessel invasion and 45 per cent of bronchiolar carcinomas had blood vessel invasion. The question naturally arose as to whether the presence or absence of blood vessel invasion was of great importance in the prognosis. Fortunately, it was possible to obtain a 100 per cent follow-up on the group of patients who had been operated upon more than five years ago and it was found that 75 per cent of the patients without blood vessel invasion in the tumor survived five years, whereas only 6 per cent of those with blood vessel invasion lived five years. Indeed, in that group of patients without blood vessel invasion without lymph node spread and without obvious spread to the surrounding structures, 90 per cent of the patients survived five years. It would seem then that this finding was of tremendous prognostic significance and, indeed, it fits in very well with the data which has been reported from Rochester in which series it has been possible to isolate tumor cells from the blood stream in about 75 per cent of cases.

If one takes these factors into consideration, it would seem quite obvious that blood vessel invasion or the spread of the tumor cells through the blood stream is a most important factor in the prognosis as to five-year cure. Unfortunately, we do not know when the tumor turns from a non-invasive one to an invasive one. We, for example, have seen small tumors with blood vessel invasion and the patient died early, whereas we have seen at least one huge tumor in which there was not blood vessel invasion and the patient got a five-year survival. If it were possible to determine before operation whether the patient has blood vessel invasion in his tumor, I think there would be a real question as to whether the patient with invasion should be submitted to pulmonary resection. Unfortunately, we are not able to do this at the present time. The recovery of carcinoma cells from the blood stream might well be a more direct approach to this than efforts at obtaining the information by bronchoscopic biopsy or aspiration biopsy.

It would seem evident that if a patient can be brought to pulmonary resection before his carcinoma has invaded the blood stream, he has a very excellent chance of five-year survival, namely in the neighborhood of 75 per cent or above. The fact that in the past we have been able to pick up only 25 per cent of the patients while they are still in this happy state of affairs should not alter our enthusiasm for making efforts at early diagnosis. On the other hand, once having made the diagnosis of carcinoma of the lung, it would seem likely that an operation which gets around the tumor grossly is fairly satisfactory for the patient whose tumor has not already invaded the blood stream, and that a more radical approach will be of no great value in the patient whose tumor has already invaded the blood stream. It might be inferred, therefore, that we should continue to make every effort to bring about an early diagnosis of cancer of the lung but that the value of super-radical surgery in the extirpation of extensive tumors may be open to some question.

SUMMARY

1. At the Hospital of the University of Pennsylvania in the last fifteen years a 25 per cent five-year survival rate has been obtained for all patients undergoing resection for carcinoma of the lung. This is a 9 per cent 5-year survival rate for all patients who enter the hospital with this disease. The mortality for pulmonary resection has been 7 per cent.

2. The medical profession should continue its efforts toward the early diagnosis of carcinoma of the lung for at the present time it appears to be the best means of increasing our salvage rate in this disease.

3. There would seem to be little doubt that the presence or absence of blood vessel invasion in the surgical specimen is of great prognostic value in the outcome for the patient, since we obtained a 75 per cent five-year survival rate when blood vessel invasion was not present as opposed to a 6 per cent five-year survival rate when blood vessel invasion was observed. It would seem obvious, therefore, that our efforts should be directed toward an early diagnosis before blood vessel invasion has occurred.

Parenteral Iodine Treatment in Acute Infections and Arteriosclerosis

REPORT BASED ON 1,250 CASES AND A SURVEY OF MEDICAL LITERATURE

JOHN C. WIETERS, M.D.
Bryson City, N. C.

In a period of five years, parenteral iodine medication was used successfully in a series of 1,250 cases of acute infections of diverse etiology and of arteriosclerosis. Altogether more than 9,000 intramuscular or intravenous injections were given.

The medication used for the intramuscular injections was a colloidal iodine preparation* containing elemental iodine 2 mg., potassium iodide 4 mg., starch 30 mg., and distilled water q.s. in each 2 cc. ampul.

The average dose for adults is 2 cc. by intramuscular injection twice a week. In emergencies, where faster action and daily treatments are indicated, slow intravenous injections of cerium iodide are preferred.

This colloidal iodine preparation has three outstanding advantages in the broad field of iodide therapy.

1) The iodine reaches the therapeutic target immediately, without the delay and uncertainty of oral administration.

2) The iodine is provided in colloidal form, in combination with starch, from which it is released gradually to the tissues which are the seat of local pathology.

3) The patient's full cooperation is assured at all times and he necessarily remains under the direct supervision of his physician.

Parenteral cerium iodide was used for the intravenous injections. This preparation** contains cerium iodide 9 mg., elemental iodine 3 mg., dextrose 15 mg., and distilled water q.s. in each 2 cc. ampul.

The average dose for adults is 2 cc. by slow intravenous injection, which may be repeated daily as needed.

Intravenous cerium iodide has three definite advantages in the broad field of emergency iodide medication:

1) The intravenous route reaches the therapeutic target in seconds.

2) Cerium iodide reaches the lesions through the bloodstream virtually unchanged.

3) A form of effective medication is provided in acute infections, where daily visits and treatments are often needed.

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*Available to physicians as Kamide ampuls, supplied by Swan's Laboratories of Andrews, N. C.

**Available to physicians as Ceride ampuls, supplied by Swan's Laboratories of Andrews, N. C.

ACUTE INFECTIONS

It is the concensus of medical opinion that the thyroid gland needs an adequate supply of iodine in order to perform its functions properly. Thus Goodman and Gilman[1] say that the iodides are effective therapeutic agents and are of particular value in the treatment of hyperthyroidism and the prophylaxis of goiter.

The minimum daily requirement of iodine is 0.1 mg. Near the seacoast iodine is abundant in the drinking water and vegetables and the occurrence of deficiency is uncommon. However, in certain inland areas of high altitude neither the water nor the local vegetables contain sufficient iodine and simple goiter is prevalent (Barr[2]).

Cretinism is endemic in the village of Cogne, Aosta, in the Dolomite Italian Alps. Almost the entire population consists of tiny cretins. This is because the natives drink melted snow lacking in iodine content. Simple goiter is likewise prevalent in the Swiss Alps, Himalayas, Pyrenees, Andes and mountainous areas of the United States, Canada, and Mexico.

In animal experiments and pathological studies, Cole and Womack[3] established the fact that the thyroid gland takes an active part in the mechanisms combating acute infections and fevers. They observed that lesions of the thyroid gland produced by infections and toxemias closely resembled the microscopical picture seen in exophthalmic goiter and toxic adenoma. In both conditions the iodine content of the thyroid gland was markedly reduced. From their studies they concluded that "it seems logical to assume that administration of iodine to patients with infectious processes, especially of the acute type, might be beneficial."

A survey of medical literature shows that parenteral injections of iodides have been reported to be beneficial in numerous acute infections of diverse etiology. This wide list of diseases includes herpes zoster (Ruggles[4], Beers[5]), poliomyelitis (Horder[6], Miranda Ortiz and Gonzalez Calzada[7], Edward[8],[9]), epidemic encephalitis (Economs[10]), erysipelas (Kewalram[11]), pneumonia (McSweeney[12]), septicemia (Chopra[13]), septic abortion (Bouche[14]), parotitis (Altemeier[15]), bubonic plague (Bharadwaj[16], Vassalo[17]), puerperal fever with pelvic peritonitis (Erfurth[18], Bobrik[19]), and acute infections generally (Cooke and Womack[3], Wadhjwani[20], Shelmire[21]).

With respect to poliomyelitis, herpes zoster and epidemic encephalitis, it is to be noted that iodine is an effective viricide (Gershenfeld[22]).

In our own experience covering a total of 1,250 cases with 9,000 treatments, intramuscular or intravenous iodine proved valuable in a wide variety of acute infections of diverse etiology. The conditions treated successfully included herpes zoster, acute phlebitis, acute cystitis, acute mastitis, acute otitis media, acute follicular tonsillitis, acute sinusitis, influenza, undulant fever, furunculosis, pyodermatitis, acute iritis, and other acute infections.

In view of the diverse origin of the above diseases, it is obvious that the effect of the iodine therapy is nonspecific. We believe that the explanation is to be found in rapid replenishment of the iodine content of the depleted thyroid gland, a very important factor in the mechanism of combating all acute infections.

The patients covered by this report came from the neighborhood of the Great Smoky Mountains of North Carolina and Tennessee. This is a region in which the iodine content of the drinking water and local vegetables is low and in which many residents would be likely to suffer from a latent iodine depletion.

It is to be noted also that the favorable results of Miranda Ortiz and Gonzalez Calzada in poliomyelitis came from Mexico City, which city is inland and has an elevation of over 7,000 feet; while Edwards' successful results in the same disease were reported from Winnipeg, which is located in the goiter belt of western Canada.

In cases where iodine depletion reduces resistance to acute infections, it is to be expected that intramuscular or intravenous injections of iodine in a utilizable form that reaches the depleted tissues immediately and unchanged would produce prompt and favorable results.

ARTERIOSCLEROSIS

The value of iodides in the treatment of arteriosclerosis is widely accepted by medical authorities. Sollmann[23] states that the iodides are employed in arteriosclerosis, coronary sclerosis, angina pectoris and aortic aneurysm. He adds that, in the lighter grades of these conditions, their continued administration seems to give gradual relief to the functional phenomena, especially the pain.

Bastedo[24] recommends the iodides in arteriosclerosis, atherosclerosis and arterial hypertension. McGuigan[25] says that they are beneficial in premature arteriosclerosis, essential arterial hypertension, aneurysm of the aorta and angina pectoris.

There are numerous other medical textbooks in which favorable reference is made to the use of the iodides in arteriosclerosis: Cushny[26], Osler[27], Solis-Cohen and Githens[28], Hare[29], Wilcox[30], Wyckoff[31], Piersol[32], Boas and Boas[33], and Hiller[34].

Experimentally, numerous investigators have reported favorable results with iodine in the treatment of atherosclerosis in rabbits produced high cholesterol feeding (Liebig[35], Seel and Creuzberg[36], Turner[37], Ungar[38], Rosenthal[39], Page and Bernhard[40], Damrau[41], Masson[42], Mardones and Jiminez[43]).

Clinically, numerous original reports on the successful treatment of arteriosclerosis with iodides have been published: Wyckoff[31], Bix[44], Guggenheimer and Fisher[45], Stevens[46], Damrau[41], Seel[47], and Feinblatt, Feinblatt and Ferguson[48],[49].

In this connection the reports of Feinblatt, Feinblatt and Ferguson[48],[49] are of special interest, because they are as recent as 1955-56 and these investigators administered the iodides intramuscularly and intravenously in a large group of patients with arteriosclerosis. They observed profound relief of the symptoms of arteriosclerosis.

In more than 90 per cent of our cases of arteriosclerosis treated with intramuscular injections of colloidal iodine or slow intravenous injections of cerium iodide, our results were very satisfactory and in many cases they were really outstanding. The symptoms relieved included headaches, dizziness, leg cramps, asthenia, amnesia and disorientation. In many cases of hypertension due to arteriosclerosis, we were able to reduce the blood-pressure decidedly in three days.

We have observed no adverse reactions to either the intramuscular or intravenous injections.

CONCLUSIONS

1. Study of 1,250 cases comprising more than 9,000 treatments demonstrates that intramuscular colloidal iodine and intravenous cerium iodide injections are safe and effective in the treatment of acute infections of diverse etiology and of arteriosclerosis.

2. Parenteral iodine medication quickly replenishes the iodine content of the thyroid gland, which is depleted in acute infections. It has been established that the thyroid gland takes an active part in combating acute infections and fevers.

3. Iodine administered intramuscularly or intravenously rapidly reduces hypercholesteremia and thereby aids in the treatment of reversible arteriosclerosis.

4. When administered by the intramuscular or intravenous route, the iodine quickly reaches the therapeutic target unchanged and unaffected by the digestive juices.

5. Better therapeutic results are obtained in inland and mountainous areas where the natural supply of iodine in drinking water and local vegetables may be deficient.

6. A comprehensive survey of medical literature confirms the value of parenterally administered iodine in the treatment of acute infections of diverse etiology and of arteriosclerosis.

7. No ill effects were observed from the intramuscular or intravenous injections.

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INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

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CARDIOLOGY

PITFALLS IN THE DIAGNOSIS OF PULMONARY HYPERTENSION

By JONAS BRACHFELD, et al
Department of Medicine, Hahnemann Medical College and Hospital
(In *American Heart Journal*, Vol. 55, No. 6, Page 905)

The diagnosis of primary pulmonary hypertension is creating increasing interest in the literature, although the nature of this condition remains obscure. The clinical picture is entirely nonspecific and essentially consists of a syndrome in young adults characterized by weakness, malaise, dyspnea on effort, not associated with orthopnea until late, hoarseness due to pulmonary artery enlargement and chest pain simulating angina. Syncope on effort and sudden death after trivial surgical procedures may be the only manifestations, hemoptysis is rare and right heart failure and cyanosis are frequently seen in the end stages.

In a typical case there are the physical signs of pure right ventricular hypertrophy with accentuated second sound and palpable heave over the precordium. X-rays show a prominent right ventricular and pulmonary artery salient, and the pulmonary hilar vessels are increased in size while the peripheral lung fields show decreased vascularity. The left atrium and pulmonary parenchyma are normal. Electrocardiogram shows right ventricular hypertrophy and frequently suggests right atrial hypertrophy. However, none of these signs are reliable and the entire picture can be imitated by: (1) Diseases of the pulmonary parenchyma (this is excluded chiefly by the finding of normal lung fields and primary pulmonary hypertension). (2) Intracardiac or intervascular shunts (extremely difficult to exclude some of these even after doing cardiac catheterization). (3) Lesions of the pulmonary arterial vasculature other than those due to shunts, such as embolic occlusion of the pulmonary artery due to multiple pulmonary infarcts, schistosomiasis, amniotic fluid emboli and microscopic thromboses due to cryoglobulinemia or sicklemia. (4) Obstruction of the pulmonary veins or of the mitral valve (the latter being the most commonly misdiagnosed entity simulating primary pulmonary hypertension.

Cases are presented showing the ease of misdiagnosis even with sophisticated work-ups, and the authors summarized the article by stating that the above other four causes of right ventricular hypertrophy and pulmonary artery and right ventricular hypertension should be excluded before the diagnosis of primary pulmonary hypertension is made. The importance of left heart catheterization in excluding cases of occult mitral stenosis is stressed and a case is described in which such disease was present with the unusual etiology of endocardial fibroelastosis involving the mitral valve

Comment: This is a diagnosis that in my limited experience is extremely difficult to make with any degree of assurance. The most frequent imitators of primary pulmonary hypertension are: high pressure left-to-right shunts, such as ventricular septal defect, an aortic septal defect or a patent ductus arteriosus with atypical murmurs, and also, of course, the case of atypical mitral stenosis. Diagnosis can be suspected, however, if the other causes of pulmonary artery hypertension are kept in mind and systematically and thoroughly excluded.

PEDIATRICS

Staphylococcus Pneumonia in Childhood. J. Kringelbach and J. Winge. Ugesk. Iaeger 120:143-150 (Jan. 30) 1958 (In Danish) (Copenhagen).

Staphylococcus pneumonia occurs most frequently during the first three months of life. The mortality is considerable. Two main types are described: (1) an acute fulminating type, often fatal after a few days, and (2) a more prolonged and less malignant form which does not react to sulfonamide preparations or penicillin. During the course of the latter type empyema or pneumothorax develops, possibly with tension or pyopneumothorax. Roentgenologic examinations show infiltrations, frequent atelectases and pneumatocele formation. The diagnosis is suggested by the clinical course and may be verified by culture from the lungs or pleurae. Plasma-cell pneumonia is especially to be considered in differential diagnosis. Treatment consists in administration of tetracycline preparations, use of oxygen, and gastric aspirations; pleural complications are treated surgically. Among the 228 patients with pneumonia treated in the pediatric department of the Copenhagen County Hospital in Gentofte from 1955 to March, 1957, there were 13 cases of staphylococcus pneumonia or empyema, 11 of them in infants less than one year old. Of the six deaths in the entire series, three occurred in infants less than four months of age.

COMMENT

Staphylococcus infection is one among the most serious types of infection with which we have to deal. No one drug or antibiotic alone is sufficient to cure these infections, and it is a very serious condition under any circumstance. A child so infected should be in a hospital where it may be treated and receive diagnostic and progress examinations, which are very essential in this condition.

Medical Center Miscellany

A 25-year-old woman graduate swept the board of senior honors in the second University of Mississippi School of Medicine Commencement, June 8.

Dr. Walterine Herrington of Union received the medical school Leathers Medal which goes to the graduating student selected as outstanding by the faculty and Dr. D. S. Pankratz, dean.

Leadership abilities and motivation are considered along with scholarship in making the selection, Dr. Pankratz explains.

Although scholastic achievement was not the only consideration in Dr. Herrington's recognition, the dark-eyed State Medical Education scholarship student rated top spot in her class in grades for the four years.

This accomplishment brought her a $100 cash award offered all medical schools by the American Medical Women's Association. The winner must be a woman who leads her class scholastically.

Dr. Herrington expects to practice in one of Mississippi's rural communities as required by her scholarship agreement. Partner in practice, as in internship at Memphis City Hospitals will be her husband, Dr. Charles Bell of Pope, to whom she was married June 15. Dr. Bell is also a 1958 graduate of the University of Mississippi School of Medicine.

Dr. Herrington is a charter member of Mississippi Alpha chapter, Alpha Omega Alpha, serving as secretary during her junior and senior years. Her record of scholastic excellence reaches back through pre-med work at Mississippi College and East Central Junior College.

Dr. Herrington's awards were presented during commencement exercises in the First Baptist Church. Forty-four doctor of medicine degrees and 14 bachelor of science in nursing degrees were conferred by Chancellor J. D. Williams.

Nurse Award

The first Faculty Award for a graduating nursing student was presented during the commencement with Miss Jeanette Waits of Leland selected for the honor. Chosen by the department of nursing faculty and its chairman, Miss Christine Oglevee, the Faculty Award winner is judged on grades, personality and nursing art.

GP Fellowship

Dr. Benjamin F. Banahan of Jackson who completed his internship at the University Hospital June 30, has received a $1,000 Meade Johnson fellowship for general practice training. Dr. Banahan will remain at the University Hospital for his GP residency.

New Interns

Eleven of the 24 new interns set to start work in University Hospital July 1 are 1958 graduates of the University of Mississippi Medical School.

They are Henry W. DeWitt of Hattiesburg, William R. Eure of Hattiesburg, Milton Fant of Jackson, Patrick G. McLain of Brandon, John A. McLeod, III, of Hattiesburg, Robert L. Nix of Winona, James C. Waites of Waynesboro, Milton R. York of Jackson, and J. P. Jones of Jackson.

Other new interns, their homes and schools are: William F. Childres of Houston, Texas, Baylor; William C. Garre of Amarillo, Texas, University of Texas Southwestern; Richard T. Green of Lake Charles, Louisiana, Tulane; Walter P. Griffey, Jr., of Baltimore, Maryland, Vanderbilt; Joe S. Hester of Starkville, University of Tennessee; David L. McNeil of Houston, Texas, Baylor; John R. Montgomery of Town Creek, Alabama, University of Alabama.

Louis S. Riley, Jr., of Hattiesburg, Baylor; Carl Edward S. Sills of Jackson, Tulane; Thomas S. Stolee of Minneapolis, Minn., University of Minnesota; George R. Walker, Jr., of Birmingham, University of Alabama; Lloyd C. Warr of Clanton, Alabama, University of Alabama, and Hardy B. Woodbridge, Jr., of Ridgeland, Tulane.

The Department of Anesthesiology at the University of Mississippi School of Medicine in Jackson has been designated a separate department and Dr. Leonard W. Fabian named as professor and chairman.

Dr. Fabian comes to Mississippi from Duke University School of Medicine where he has been an assistant professor since 1955.

He is a diplomate of the American Board of Anesthesiology, member of the American Society of Anesthesiologists, the International Anesthesia Research Society and the American Medical Association. He took his residency training at the University of Arkansas Medical Center where he also interned after having received both his M.D. and B.S. degrees from the University of Arkansas.

Dr. Fabian has been active in anesthesia research at Duke and is co-inventor of a precision vaporizer recently evaluated there. He is particularly interested in pediatric thoracic anesthesia.

He replaces the late Dr. G. Bittenbender, first professor of anesthesiology at the University of Mississippi Medical Center.

FIFTY-YEAR CLUB

A luncheon meeting of the Fifty-Year Club was held at 12:30 p.m. on Tuesday, May 13, 1958, at the University Medical Center, Jackson, Mississippi. Dr. D. S. Pankratz, director of the University Medical Center, was host.

The followinrg members of the club were present: Dr. Isaac Edwards, Canton; Dr. Lancelot L. Minor, Memphis, Tennessee, R.F.D.; Dr. Harvey F. Garrison, Sr., Jackson; Dr. William W. McBryde, Ethel; Dr. G. W. F. Rembert, Jackson; Dr. B. L. Crawford, Tylertown; Dr. James R. Hill, Corinth; Dr. James H. Fox, Jackson; Dr. Hal M. Terry, Goodman; Dr. Richard N. Whitfield, Jackson; Dr. B. Z. Welch, Biloxi; Dr. George W. Bounds, Meridian; Dr. Hunter L. Scales, Starkville; Dr. David A. Ratliff, Columbia; Dr. E. C. Parker, Gulfport; Dr. J. S. McIntosh, Jackson; Dr. Felix J. Underwood, Jackson; Dr. W. H. Frizell, President, Brookhaven.

Others in attendance included: Dr. Howard A. Nelson, president, State Medical Association, Greenwood; Dr. C. A. Pender, Kosciusko; Dr. W. H. Anderson, sponsor, Booneville; Mrs. D. A. Ratliff, Columbia; Dr. D. S. Pankratz, Jackson; Miss Cleta Brinson, secretary to Dr. Underwood, Jackson.

Dr. W. H. Frizell presided and called upon Dr. James R. Hill to give the invocation.

In presenting his report as secretary of the club, Dr. Felix J. Underwood stated that since the club was organized in 1948, 143 physicians had been presented fifty-year certificates and pins and that 60 members were living at the present time. He read the names of the following members who had passed away since the last meeting: Dr. Henry L. Lewis, Liberty; Dr. James H. Stennis, Mathiston; Dr. William D. McCalip, Yazoo City; Dr. Hervey L. Shannon, Flora; Dr. Newnan C. Waldrep, Tishomingo; Dr. Hugh L. McKinnon, Hattiesburg; Dr. Walter Eugene Clark, Philadelphia; Dr. Charles H. Holman, Carrollton; Dr. Benjamin J. Marshall, Whitfield; Dr. D. O. Pierce, Jonestown; Dr. Seale Harris, Birmingham, Alabama (honorary member); Dr. Rudolph Matas, New Orleans, La. (honorary member).

The following officers of the club were unanimously re-elected for the coming year:

Dr. W. H. Frizell, president, Brookhaven.
Dr. B. L. Crawford, vice-president, Tylertown.
Dr. Felix J. Underwood, secretary, Jackson.
Dr. W. H. Anderson, sponsor, Booneville.

It was a pleasure to deliver a fifty-year pin to Dr. Thomas Clay at Tutwiler at the six o'clock fish fry a few days ago. He was the first white male child born in Tutwiler and his wife the first white female child. Dr. Clay's practice has repeatand stood the test for fifty years and his folks dearly love him. Respect, admiration and appreciation were all in evidence, for him, the lovely wife and family. Three pins and certificates have been presented in Tutwiler—Drs. Baxtrom, Denson, and Clay.

It was good to have Dr. LeRoy Wilkins present. He is a beloved citizen of the Delta.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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"YOU OWE IT TO YOURSELF"

June is over, and July is half gone. In a few weeks the children will be starting to school again, which should make this a good time to stop and think—have you set aside any time to "take off" and relax and be with your family?

It might be a good time to take stock of some things, too; for instance, whether you are putting first things first, or just putting them off. Every day it seems we are reminded of one or more of our obligations—to our patients, our community, our church, our *alma mater*, and to "humanity." But there is seldom anyone around who cares to remind you of your most basic and most important obligation—the dual responsibility you bear for yourself and your family.

First, your obligation is to take care of yourself, because a dead physician is not worth much to anybody except perhaps the undertaker. An occasional week or two of vacation is not time stolen from those who might get sick while you are away; but it is a means of insuring your health, so that you will be around to take care of them next year.

And your family—your obligation to them must be considered. Can you afford to be away from work for a few weeks, or does your wife need a new freezer or a new fur? Chances are what she really wants and needs most is a little time with her husband. And the children? You already know the answer to that.

It really boils down to this: what is MOST important to you? Admittedly, your many obligations are serious ones. But you can't do justice to your patients while completely neglecting yourself. And a doctor's duty to his community and to "humanity" cannot be fulfilled unless he starts with his family.

Summer is half over. What are you doing about it? Believe I'll get the kids and go fishin'.

(L. F. R.)

TRUTH - DILIGENCE - SERVICE

(Guest editorial contributed by Dr. John M. Alford, Greenwood, Mississippi)

As one reflects on recent happenings at the state medical meeting, a mixed feeling of approval and disapproval is experienced: approval for the excellent production of the convention and the brisk interest in our field of medical practice; disapproval for expressions and exhibitions of our persistent entrenched position. This position is characterized by expressions that use the terms "rugged individualist", "doctors are individualists", "enlightened self-interest", "honest negation" and preserving our system of freedom as a bulwark against socialism. The overtone of these expressions points toward men more interested in self-seeking than actual dedication to self- forgetting in the greater interest of the health and welfare.

Can an institution such as our medical association shift its outlook enough to shake off some of the shackles of traditions that prevent recreating a vision of *truth, diligence* and *service?* To do that our common conscience is going to have to be penetrated enough to realize our mistakes. An individual and associational self-analysis to the extent of pain and rededieation is needed. Are we "one of the last bulwark of freedom" in our American society or are we in a pharisaical rut? Are we "rugged individuals" or are we individuals ruggedly irresponsible? Is self-interest ever enlightened? Self interest directs energy and purpose inward and with connotations of "getting-yours" in this race for survival. Is that illuminating our society? If one reflects a little it is undeniable that self-forgetting is the only enlightened way. It is the only way that creates anything of great worth. Of course this has always been on an individual level in the lives of great men and women of history. Can an institution, can a medical association rise to such a level of enlightened self-forgetfulness? If it does, it will need to re-direct its energy away from service to members in the form of negotiating contracts and fee schedules, obtaining insurance contracts at reduced rates, lobbying for, or against, this or that legislation not in the self-interest of our association. Its financial statement will have to look less like something acceptable to corporation stockholders, who are confronted with the probability that a larger plant will be needed soon to house the enlarging production line; (cynically, one could add *in the pursuit of truth, diligence and* serviee). Service to whom, diligence for whom and truth towards what ultimate goal is the question self-reflection asks of our association with its A. D. 1958 financial statement. If our medical association rises to the real challenge of our time it will think in terms of becoming totally, publicly related and less in terms of the technique of public relations, a technique which probably has developed as a result of individuals orienting themselves along the lines of the modern selling "piteh", an orientation that Fromm regards as "non-productive" for the greater good.

Criticism is running high towards the medical association and some of it we privately admit is justified. To diagnose the thing that is incipient, hidden but actually responsible for an illness requires very careful and sometimes painful analysis. It requires knowledge from many specialties sometimes. It also requires the acknowledgment that something may be wrong. Our association needs this type of scrutiny. It needs to enlist other fields of knowledge where men are genuinely studying man from other specialized standpoints. Sociology will tell us something of the organic nature of society, anthropology will enlighten us. more as to whence came we, a help to deciding where we might be going. Psychology is seeking to plumb the depths of man's being and acquiring knowledge not found in formal medical studies. Creators of art and literature express truth for our time often with a clearness unexcelled. Where is there an organization in our society today that penetrates and permeates all the areas of the lives of people to the extent that the medical profession does? Where is there another organization with this intimate relationship to people that also has the academic background the medical profession has had and does maintain to some extent? What other organization except our medical profession is logically suited to take the lead in instituting means to integrate formally and make functional this knowledge and truth gained from the humanities, especially the academic humanities? It is a challenge and it is a chance to break from some of our fixed habits and shackling traditions. Our medical association should begin to use its time and energy in this more creative pursuit in the interest of mankind, rather than directing so much effort towards service to members. Our organization is not a union, it should not be a pressure group, its executive functions should not be heavy with service to members. We are constituted with a more noble purpose than that. Let us be diligent.

J.M.A.

DR.UNDERWOOD HONORED

On June 23 at the Heidelberg Hotel in Jackson, a great tribute was paid to a great man at a six o'clock dinner. Dr. Felix J. Underwood was duly praised for his 45 years of outstanding service in public health. This great occasion was sponsored by the official public health workers of Mississippi. Dr. A. L. Gray, assistant executive officer, was master of ceremonies and did the job exceedingly well.

Gov. J. P. Coleman spoke briefly and to the point in giving due credit to Dr. Underwood as a health officer and a citizen and at the same time reviewed medical progress and pointed out the value medicine has been to our people. Governor Coleman has shown his friendship toward the medical profession and his interest in our four-year medical school and our hospital system.

Mr. Clayton Rand, well-known Mississippi editor and platform speaker, traced the progress of medicine and public health in our state and nation in an entertaining manner while paying a fine tribute to Dr. Underwood. His grasp of medical progress, his wit and humor, proved him equal to a big assignment, which he filled exceedingly well.

Dr. Underwood responded to the glowing tributes in an sincere and appropriate manner, giving due credit to his co-workers. A great executive, a man of health vision, and a man of practical application sufficient to make our dreams come true, he merited the ovation extended him for the service he has rendered. This evidence was not expressed by public health workers alone, nor from members of the medical profession, but it came from a cross section of the people of Mississippi and it came from other states and other nations. The life and the work of Dr. Underwood has added mightily to the length and volume of human life in Mississippi and across the nation.

Dr. A. L. Gray takes over as Dr. Underwood's successor. He is able and safe in his own right. In public health as in the field of medicine great challenges are ahead. We shall continue to go forward with Dr. Gray.

DR. WALDROP RETIRES

Dr. H. G. Waldrop is retiring as health officer for Prentiss, Tippah, Alcorn and Tishomingo counties after fifteen years of faithful service. On June 16 in Booneville a fitting tribute was paid to him as a practitioner, a health officer and a citizen. The four counties were represented. Dr. Waldrop is a native of Alabama, served in World War I, then served as a general practitioner for many years mostly in Union, Prentiss and Tippah counties. His fine wife and two daughters have been splendid helpers across the years. He lost his only son in World War II. Those who paid tribute on the occasion were Drs. R. B. Caldwell, president State Board of Health, A. L. Gray and J. A. Milne of the State Board of Health, Jackson, and W. H. Anderson, Booneville. Dr. Waldrop has been a builder of health assets and a fine Christian citizen.

RIPLEY DEDICATES NEW HOSPITAL WING

On Sunday, June 29, the Ripley citizenry dedicated a new wing to their fine hospital now making 52 beds. Mr. Erst Long of Ripley was master of ceremonies and Hon. Fred B. Smith was the chief speaker. Mr. B. G. Horton is the able administrator.

This hospital has made a fine record in service to the people and in handling its finances as well. As we recall it was the second Hill-Burton Hospital to be built in Mississippi. Dr. John Tate is president of the board of trustees. Ripley and Tippah County are on the up and up in medical service.

News and Comment

NEW PRESIDENT OF MSMA

Dr. Vise

Tennessee born and educated, the new president of the Mississippi State Medical Association, Dr. Guy T. Vise, received his B.S. and M.D. degrees from the University of Tennessee in 1930 and 1932, respectively. Following an internship at the Southern Baptist Hospital in New Orleans, a residency from 1934 to 1938 at Matty Hersee Hospital in Meridian, he was also resident surgeon at the Matty Hersee Hospital two years before entering active practice in Meridian.

From the beginning of his practice Dr. Vise has identified himself with organized medical groups, holding memberships in his local and state societies, the Southern Medical Association, Southeastern Surgical Congress, International College of Surgeons, and Academy of General Practice. He served on the MSMA Council from 1952 to 1956, and has been clinical instructor in the Department of Preventive Medicine at the University Medical Center.

Mississippi doctors have found Dr. Vise genuine, a personable, hard-working physician with vision and leadership ability. That his helpmate is the beautiful Mailande Martin Vise is no secondary asset. They are the parents of five children, a daughter, and four sons, the eldest of whom is a student at Harvard.

Dr. Vise is head of the Vise Clinic in Meridian, and is actively engaged in community and church affairs, practicing good public relations along with medicine as a good doctor-citizen.

DR. GUNDERSEN PRESIDENT; DR. ORR PRESIDENT-ELECT OF AMA

Dr. Louis M. Orr, urologist of Orlando, Fla., was chosen unanimously as president-elect of the American Medical Association at the San Francisco meeting. Dr. Orr, who in recent years has been vice speaker of the House of Delegates and chairman of the A.M.A. Committee on Federal Medical Services, will become president at the June, 1959, meeting in Atlantic City, succeeding Dr. Gunnar Gundersen of La Crosse, Wisconsin, who became the 112th president.

The 1958 Distinguished Service Award of the American Medical Association was voted to Dr. Frank Hammond Krusen, professor of physical medicine and rehabilitation, Mayo Foundation, Rochester, Minn.

Miami Beach will be the place of the 1960 meeting, and New York the 1961 meeting.

Other officers are: Dr. W. Linwood Ball of Richmond, Va., vice-president; Dr. E. Vincent Askey of Los Angeles, re-elected speaker, and Dr. Norman A. Welch of Boston, vice-speaker.

Dr. Warren W. Furey of Chicago was elected for a five-year term on the Board of Trustees, succeeding Dr. E. S. Hamilton of Kankakee, Ill. Dr. Raymond M. McKeown of Coos Bay, Ore., was re-elected for a five-year term, and Dr. R. B. Robbins of Camden, Ark., was named to fill the unexpired term of Dr. F. J. L. Blasingame.

DEATHS

DR. HUGH C. McLEOD

Dr. Hugh C. McLeod, 63-year-old Hattiesburg physician, died May 15 at University Hospital after becoming ill at Heidelberg Hotel.

The prominent surgeon was attending the annual session of the Mississippi State Medical Association at the hotel.

A native of Purvis, Dr. McLeod had lived in Hattiesburg since 1921. He was a graduate of the University of Mississippi and Tulane University Medical School. He had been practicing 38 years and was a fellow in the American College of Surgeons and National College of Surgeons.

A member of the board of stewards of Main Street Methodist Church, Hattiesburg, he was past president of the Kiwanis Club, a member of the Elks Club and a colonel on the staff of Gov. Paul B. Johnson.

He was a former president of the South Mississippi Medical Association and a member of the Board of Trustees of Institutions of Higher Learning.

Survivors include his wife, Mrs. Bessie Golden McLeod; two sons, Dr. H. C. McLeod, Jr., resident in surgery of Oschner's Clinic in New Orleans and John A. McLeod III, senior medical student at University Medical Center; two daughters, Mrs. C. C. Sullivan of Hattiesburg and Mrs. O. J. Miller of Monroe, La.; a sister Mrs. H. A. Gilliam of Hattiesburg; a brother, Dan McLeod of Hattiesburg.

DR. CAMERON MONTGOMERY

Dr. D. Cameron Montgomery, 73, nationally known eye, ear, nose and throat specialist, died at his home May 29. He had been ill for a year.

Dr. Montgomery, born in Greenville, received part of his education at Vanderbilt University in Nashville, Tenn. He received an AB degree in 1906 and was awarded his M.D. degree at Jefferson Medical College in Philadelphia in 1910.

For 44 years Dr. Montgomery engaged in the practice of medicine. He was a member of the American College of Surgeons and the American Medical Association.

A veteran of World War I, he served as a lieutenant in the medical corps. He was for a time president of the First National Bank of Greenville and was chairman of the board of that bank at the time of his death.

Survivors include his widow; three sons, Dr. G. C. Montgomery, Jr., of Greenville; Dr. John A. Montgomery of Birmingham, Ala., and William D. Montgomery of Greenville; and a half brother.

DR. DEWITT T. BROCK

Services were held for Dr. Dewitt T. Brock, 68, Jackson physician and surgeon who died May 20.

He was a native of Franklinton, La., and a former resident of McComb but had been in Jackson since 1932.

He was superintendent of Charity Hospital for two years and later was associated with the Shands, O'Ferrall Clinic. He was a member of the Central Medical, Mississippi, and the American Medical Association, was a Mason, a Shriner, a former president of the Jackson Exchange Club and a member of the First Baptist Church of McComb.

Dr. Brock was a veteran of World War I, a past commander of the American Legion post at McComb and served on the staff of the late Governor Mike Conner.

Survivors include his wife, the former Lucille Brumfield of Liberty; a son, Dr. D. T. Brock, Jr., of Jackson; three daughters, Mrs. C. C. Ferguson, Mrs. Dora B. Mooney, both of Jackson, and Mrs. Paul Breland of Memphis; three sisters, Miss Lena Brock of Jackson, Mrs. Dora Knight of Goodman, and Mrs. Bessie Thornhill of McComb; a brother, Dr. H. D. Brock of McComb; seven grandchildren and two great-grandchildren.

DR. WILLIAM ROBERT HAND

Dr. William Robert Hand, 78, prominent Philadelphia physician, for more than half a century who last month was nominated for membership in the Mississippi Medical Association's honorary Fifty-Year Club, died at his home in Philadelphia June 5.

Dr. Hand received his medical education at Memphis Hospital Medical College, graduating in 1908.

Dr. Hand, a past president of the East Mississippi Medical Society, is survived by his wife, Mrs. Ester Hand, two sons, two daughters, two brothers, a sister and seven grandchildren.

Indications for Operative Treatment in Gynecology*

FRANK R. LOCKE, M. D.†
Winston-Salem, N. C.

Within recent years the definitive nature of diseases of the female reproductive system has been increasingly recognized, and the pathologic significance and natural history of the common pelvic lesions have been well established. Agreement has now been reached in regard to the significance of lesions which were once controversial, such as intra-epithelial squamous cell carcinoma of the cervix. The field of gynecology, in contrast to the field of medicine, is relatively free of controversy resulting from inadequacies of knowledge, and gynecologic and obstetric concepts and philosophies have become increasingly uniform in recent years.

In spite of this extensive knowledge and general agreement regarding the fundamental significance of pelvic lesions, the operative management of pelvic disease is almost as variable as the geographic location of the patients concerned. It is incredible that the interpretation of pelvic disease is as varied as the therapy suggests; instead, different concepts regarding the application of surgical treatment must be responsible.

The purpose of a surgical procedure is to remove a pathologic lesion or correct an anatomic deformity. In the field of general surgery, certain specific and non-specific lesions are recognized as indications for surgical intervention. The modern trend in gynecology, however, does not permit the arbitrary application of these principles, but favors a rational scientific approach to each individual problem.

In the past there existed distinct schools of thought relative to special problems in obstetrics and gynecology; these divergences resulted primarily from didactic or empiric attitudes. Empiricism has practically disappeared from the field of obstetrics and gynecology, and has been replaced by individualization of the patient, exact diagnosis whenever possible, and appraisal of the significance of the pathologic lesion in relation to the general welfare of the patient. A few decades ago an automaton might have carried on an acceptable gynecologic practice by the appropriate application of empiric rules. The modern obstetrician and gynecologist, to practice in a creditable fashion, must have a reasonable knowledge of the entire field of medicine and its interrelations with pelvic disease.

The intelligent application of surgical therapy requires a broad understanding of the pathologic, physiologic and psychologic processes of women. In the majority of cases operation is an elective procedure, and almost unlimited time is allowed for evaluation of the cause-effect relationship between the symptom complex and existing pathology. Hysterectomy is performed as an emergency operation only in cases where obstetric trauma causes rupture of the uterus and, on rare occasions, in cases of obstetric hemorrhage.

In the vast majority of gynecologic patients it is possible to make a definite diagnosis of the specific condition present, but fine judgment is often required because of the vague (non-specific) character of many gynecologic complaints and the similarity between symptoms of functional and organic disease. General study of the patient is usually necessary to establish beyond a reasonable doubt that satisfactory relief of symptoms will result from a hysterectomy.

In order to obtain excellent results in the practice of pelvic surgery, the physician must develop a superior understanding of feminine attitudes and emotional reactions. He must reach a relationship with the patient which will permit him to differentiate the functional and organic components of gynecologic complaints, and to arrive at a decision of management which is most likely to succeed. The effects of a given operative procedure must always be weighed against the consequences of other treatment for the existing pelvic disease.

The removal of normal structures in pelvic operations has been a target for unjust criticism, with the implication that the presence of limited benign pathologic changes in an organ justifies its surgical excision. It must be remembered that the removal of a normal uterus is required for the adequate treatment of most patients with procidentia. On the other hand, the performance of a hysterectomy for fibroids or endometriosis may be completely unjustified, and may destroy the patient's happiness and security.

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*Presented (by invitation) at the 90th Annual Session of the Mississippi State Medical Association, Jackson, Mississippi, May 13-15, 1958.

†Department of Obstetrics and Gynecology, Bowman Gray School of Medicine of Wake Forest College, and the North Carolina Baptist Hospital, Winston-Salem, North Carolina.

Patients with pelvic complaints are easily divided into three distinct groups:

GROUP A: Patients who present definite pathologic findings to account for all of their symptoms, or lesions which endanger their lives.

GROUP B: Those patients who have symptoms in excess of the physical findings.

GROUP C: Patients complaining of numerous symptoms which cannot be explained by any physical findings.

GROUP A—PATIENTS WITH DEFINITE PELVIC DISEASE

Benign Lesions

In a variety of benign gynecologic conditions there is no controversy concerning the indications for hysterectomy by either the abdominal or the vaginal route. This group of patients present extensive and clear-cut pathology, and symptoms obviously attributable directly to the lesions which are present. Uterine fibromyomas, uterine adenomyosis and complete procidentia are the common lesions encountered. Even in these cases, however, the decision to perform a hysterectomy for benign disease must take into account the patient's age, marital status, and desire for further pregnancies. Although conservative procedures may afford little hope of permanent cure, there is a small group of patients for whom the risk of a second operative procedure at a later date may be fully justified. A superficial review of the literature will confirm that myomectomy, resection of adenomyosis, or correction of genital prolapse may often be successfully carried out, regardless of the extent of the disease process, if there is sufficient indication for preserving the uterus in the patient concerned. In my personal experience more than 40 uterine fibroids, the largest 17 cm. in diameter, were successfully removed from a patient who subsequently became pregnant and was delivered of a full term, healthy child.

Gynecologists are in complete agreement concerning the wisdom of removing the uterus when bilateral oophorectomy is performed. This organ has no purpose in the absence of the ovaries, and its presence makes carcinoma of the cervix or endometrium a potential hazard. The operative risk is seldom increased significantly by the addition of hysterectomy to procedures which require castration.

Malignant Lesions

Various factors influencing the public and the medical profession have favored an increasing trend toward the early diagnosis of uterine cancer. In the North Carolina Baptist Hospital the vast majority of patients now presenting themselves for treatment of uterine cancer are in the early stages of the disease, when successful treatment is the rule rather than the exception.

Carcinoma of the Cervix

The investigations of the past decade have led to agreement about the significance of intra-epithelial squamous cell carcinoma of the cervix. It is generally recognized that Papanicolaou smears, punch biopsies, and quadrant biopsies are totally inadequate for the specific diagnosis of intra-epithelial carcinoma of the cervix. It is a well known fact that areas of intra-epithelial carcinoma are usually associated with invasive squamous cell carcinoma of the cervix, particularly at the margin of the lesion. To provide adequate tissue for pathologic study in cases of suspected intra-epithelial squamous cell carcinoma, conization of the cervix must be done with a knife, in a manner to remove all of the diseased tissue on the portio of the cervix and to include the endocervical canal for a depth of at least 2 cm. The pathologist has a heavy responsibility in cases of this type, and must perform serial block studies of the cones of tissue in order to obtain comprehensive and accurate appraisal of the extent of the disease.

Once a diagnosis of intra-epithelial carcinoma of the cervix has been made and the absence of invasive carcinoma definitely established, treatment by hysterectomy is indicated. Although there are minor differences of opinion concerning the technique which should be used, all authorities agree that the ovaries should be conserved in younger women, and that a significant portion of the adjacent vaginal cuff should always be removed in conjunction with the total hysterectomy. The use of intensive irradiation therapy comparable to that used in treatment of invasive carcinoma is unnecessary in cases of clearly established intra-epithelial carcinoma, and there is no justification for submitting a young woman to the extensive morbidity which is associated with this plan of treatment.

It is regrettable that the excellent investigative work demonstrating effectiveness of radical operative treatment in early invasive squamous cell carcinoma of the cervix has led to the widespread use of inadequate surgical procedures for this disease. There is no place for limited surgical procedures in the treatment of squamous cell carcinoma of the cervix. In at least 15 per cent of the patients with lesions so small that they can be diagnosed only on microscopic examination, regional lymph gland metastasis has already occurred. Barely a week passes in which I do not see a patient who has had recurrence within a few weeks following total hysterectomy and bilateral salpingo-oophorectomy performed with the idea that it is a radical procedure. Once the uterus has been removed, we are severely handicapped in our attempts to give adequate irradiation therapy without great danger of injury to secondary structures. The results with irradiation therapy for invasive carcinoma of the cervix are not ideal; however, when standardized plans of treatment are administered by competent therapists, the results invariably equal or exceed those accomplished by primary operative treatment. The morbidity is not excessive, and the mortality is negligible. Richard W. TeLinde recently made the following statement relative to this disease: "Before a man undertakes the Wertheim operation for Stage I carcinoma of the cervix, he should look himself in the eye and ask himself, "Have I any right to operate on this woman with my operative experience when I can get just as good results by irradiation'?"

In the treatment of invasive carcinoma of the cervix, no operation should be considered which does not remove the upper one-half to one-third of the vagina, the entire uterus, the tubes and ovaries, all of the parametrial tissues, and every fragment of expendable tissue from the bifurcation of the aorta to the superior surface of the levator muscles. This is an extremely radical and hazardous procedure.

Malignant Lesions of the Endometrium

Total hysterectomy and bilateral salpingo-oophorectomy are clearly indicated in the treatment of carcinoma of the endometrium. The results recorded by various authors in the treatment of this condition are extremely variable, and range from an over-all salvage of approximately 40 per cent to salvage rates of 90 per cent or more in series of considerable size. Such favorable results probably reflect alertness on the part of the professional referring group, and a high level of intelligence among the patients which has led them to seek medical attention early in the course of the disease. Special techniques in the operative procedures are probably another significant factor in the results obtained, since they might serve to protect the patient from traumatic spread of the neoplasm during the course of the operation.

There is some difference of opinion regarding the value of pre-operative irradiation for carcinoma of the endometrium. We do well to recall that pre-operative irradiation for treatment of endometrial carcinoma was initiated because of the poor results observed when primary operation alone was the standard procedure in this disease. Recent publications which criticize pre-operative irradiation in the treatment of carcinoma of the endometrium point out that such therapy occasions some delay in elimination of the tumor. On the other hand, it is well known that pre-operative irradiation will destroy the tumor in a large percentage of cases, and excellent results can be expected in those patients who show no residual tumor at the time of operation. Each author is convinced that his method is best. The series reported are generally small, however, and it is impossible to obtain an accurate comparison based on the stages of the disease and its duration prior to treatment. I am convinced that pre-operative irradiation is of major importance in the treatment of endometrial carcinoma, appreciably reducing the frequency of recurrence in the vaginal cuff, and manipulative spread of the tumor at operation.

Uterine sarcoma occurs infrequently. There is considerable doubt concerning the value of irradiation in the treatment of this lesion. Since metastasis is primarily hematogenous, it is unlikely that radical procedures which include lymphadenectomy have any particular advantage in the treatment of this condition.

Ovarian Carcinoma

Total hysterectomy with bilateral salpingo-oophorectomy is the treatment of choice for ovarian carcinoma. At one time some authorities advocated leaving the uterus, so that intracavitary irradiation of the pelvis might be carried out post-operatively. Most gynecologists have discontinued the practice, however, since the results were not improved by irradiation therapy. Involvement of the uterus and tubes is common in carcinoma of the ovary, and free carcinoma cells have recently been demonstrated in Papanicolaou smears and in the uterus and tubes of patients with ovarian carcinoma.

GROUP B—PATIENTS WITH SYMPTOMS IN EXCESS OF THE PHYSICAL FINDINGS

It is well recognized that two patients with identical pathologic findings may present histories which are totally different. Patients who have moderate degrees of pelvic relaxation with associated cystocele and rectocele, mild grades of uterine prolapse, small uterine fibromyomas, limited involvement with adenomyosis or endometriosis, and residual adnexal disease from pelvic infections often complain of symptoms which seem excessive in relation to the objective pathologic findings present. In these cases, the decision to perform an operation requires excellent judgment.

The history provided by the patient is usually the only source for obtaining information concerning subjective complaints. The severity of the symptoms is apt to be colored by emotional factors, particularly cancerphobia. The widespread publicity emphasizing the early signs and symptoms of cancer has increased the incidence of early diagnosis remarkably, but has also made cancerphobia a universal problem. The stability of the patient and her sensitivity to pain may be expected to influence the symptomatology. Patients in this group are often found to have trying problems in their personal lives. They are frequently victims of stress phenomena which produce symptoms related to many various organs.

Complaints related to organic pelvic disease can often be recognized by their specific and consistent character. Such symptoms are usually increased during menstruation. They may also bear a consistent relationship to physical activity, standing for long periods, and other specific factors. Vague complaints which vary in character and in time relationships are much more often the result of functional disease.

The complaint of excessive uterine bleeding may be very difficult to evaluate. In the absence of anemia no operative procedure should be advised until a general study of the patient has been made.

It has been our experience that specific and accurate diagnosis can be made in more than 90 per cent of the patients with gynecologic complaints if the history and physical findings are carefully correlated. The patient's attitude and the symptoms produced by mild to moderate grades of benign pelvic disease usually reflect the attitude of the physician who makes the diagnosis, and his presentation of the situation to the patient. It is obvious that the physician must have confidence in the accuracy of his diagnosis when he reassures a patient and recommends conservative management of uterine fibroids of moderate size, endometriosis producing tolerable symptoms, or an adnexal mass resulting from hydrosalpinx or a post inflammatory cyst of the ovary. Patients with lesions of this type who can be observed periodically often lead successful, comfortable and productive lives with the use of an occasional aspirin or codeine tablet when symptoms occur.

A program of corrective exercises for the management of moderate grades of pelvic relaxation, cystocele and rectocele with associated urinary stress incontinence was thoroughly understood and extensively used in the latter part of the nineteenth century. In recent years the principal proponent of this plan of treatment has been Kegel of Los Angeles. Those of us who have adopted his exercises have been impressed by the remarkable improvement of many patients who might otherwise have required operative treatment. The modern woman leads a sedentary life, and does little work which employs the levator muscle group. Stress incontinence may be consistently improved by exercise programs, and completely relieved in the majority of patients who do not have extensive injury of the bladder musculature and pelvic supportive tissues.

Patients in group B are candidates for operation when their symptoms are clearly and specifically the result of pelvic pathology which can be conclusively demonstrated on examination. The symptoms which result from the patient's functional reaction to the presence of pelvic disease should be eliminated before a decision to operate is made.

GROUP C—PATIENTS WHO HAVE SYMPTOMS IN THE ABSENCE OF DEMONSTRABLE PELVIC DISEASE

Exploratory laparotomy is rarely performed on the gynecologic service of the North Carolina Baptist Hospital. I have been unable to find a single instance during the seventeen years that this service has been conducted in which some obscure pelvic pathologic entity was found by an exploratory operation. In rare cases we have, because of persisting pelvic complaints, performed a hysterectomy in the absence of objective evidence of organic disease, and have invariably obtained poor results. We have also observed many patients who have had this treatment elsewhere, and the results were again invariably poor. The patients continued to have pelvic complaints and complaints related to other systems.

A review of the records of 1759 patients seen in my office prior to 1947 showed that approximately one-third would be classified in groups B and C. One hundred and twenty of these patients, prior to their office consultation, had had operations which failed to relieve their symptoms. A large number had been advised to have additional operations which would have been equally ineffective in view of the functional character of their disease.

SUMMARY AND CONCLUSION

The indications for operation are quite specific in a large group of patients with pelvis lesions which fully explain the symptoms present, or which endanger the patient's life. A second group of patients have symptoms which seem excessive in relation to the existing pelvic pathology. Operation is indicated only when a definite and specific relationship can be shown to exist between the patient's symptoms and the pelvic pathology which is present. A third, relatively large group of patients with pelvic complaints show no objective evidence of organic genital disease. Operation is contraindicated in this group.

Chronic Idiopathic Jaundice (Dubin-Johnson Syndrome)

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In 1954 chronic idiopathic jaundice associated with dark pigmentation of the liver was described independently by two sets of authors, Dubin and Johnson[1], and Sprinz and Nelson[2]. Brown centrolobular pigmentation of liver and Kupffer cells was found. The clinical course was marked by fluctuating low grade jaundice associated with dark urine and light-colored stools. Common complaints were right upper quadrant pain, weakness, fatiguability. Other symptoms occurring less frequently were anorexia, nausea, vomiting, and diarrhea. Direct and indirect serum bilirubin and BSP retention were almost always increased. The cephalin flocculation, thymol turbidity, and alkaline phosphatase values were commonly abnormal. The urine was usually positive for bilirubin and urobilinogen at some time during the course of the disease. Cholecystography characteristically failed to show the gallbladder well.

CASE REPORT

A 22-year-old Caucasian soldier, C. B., was admitted to the Fifth General Hospital, Stuttgart, Germany, on June 11, 1952, with a history of progressively deepening jaundice, light-colored stools, and light brown urine of ten days' duration. Five days prior to admission he developed fever, chills, and epigastric pain. There was no previous history of jaundice, blood transfusions, or exposure to hepatotoxins. Familial history of jaundice and liver disease at that time was negative. The patient was alert and well oriented. Temperature was 98°F., BP 125/80, and pulse 88. Height 5' 10". He was mildly jaundiced, but venous distention, palmar erythema, and spider angiomata were absent. The liver, which was smooth and tender, was palpated 4 cm. below the costal margin; splenomegaly was absent.

Chemical determinations were: cephalin flocculation 3-plus, thymol turbidity 7.1 units, icterus index 26, direct bilirubin 2.1 mgm.%, indirect 1.6 mgm.%. Cholecystography failed to show the gallbladder. A liver biopsy was reported as showing minimal inflammation and brown pigment of undetermined nature in the liver and Kupffer cells. On the basis of these findings a diagnosis of hepatitis was made and supportive therapy given. As the acute symptoms subsided he complained of right upper quadrant pain and fatigue on minimal exertion. Acholic stools, light brown urine, hepatomegaly, and jaundice persisted. He was transferred to Walter Reed Army Hospital, October 7, 1952, for further treatment. Cephalin flocculation was negative, BSP 25% retention at 45 minutes, direct bilirubin 1.0 mgm.% and indirect 1.9 mgm.%. Therapy consisted of bed rest, high protein, high carbohydrate diet, and vitamins; 20 mgm. of ACTH was administered for five days. On May 31, 1953, he was discharged from the hospital and sent home. On four subsequent occasions he was examined at Ft. McClellan Army Hospital, Alabama. He continued to complain of excessive fatigue and right upper quadrant discomfort. Hepatomegaly was not detected on the last three examinations. Icterus and liver function studies did not change significantly. (Figure 1). On the fourth admission to the Ft. McClellan Army Hospital, the original liver biopsy was reappraised and the correct diagnosis of Chronic Idiopathic Jaundice was made. The patient's appetite was good. Weight on entry to the Army was 186 lbs., it was 212 at the time of discharge from Walter Reed Army Hospital. Weight at the last examination was 208 lbs. He was doing light factory work eight hours a day five days a week.

A younger brother became jaundiced October, 1955, and was asymptomatic. An examination at Ft. McClellan Army Hospital revealed minimal icterus of the sclera and skin. Hepatomegaly was absent. BSP retention was 16%, direct bilirubin 3.3 mgm. %,

FIGURE I

Date	Cephalin Flocculation	Thymol Turbidity (Units)	BSP Retention	Alkaline Phosphatase	Albumen (Gms.%)	Globulin (Gms.%)	BILIRUBIN	
							Direct (mgm.%)	Indirect (mgm.%)
6/11/52	3 plus	7.1					2.1	1.6
10/25/52	negative	negative	25%	normal	normal	normal	1.0	1.9
5/31/53	negative	negative	19%	normal	normal	normal	1.2	2.1
11/18/53	negative	negative	11%	normal	normal	normal	2.5	total
7/20/54	negative	negative	6%	normal	normal	normal	2.6	total
7/16/53	negative	negative	12%	normal	normal	normal	2.0	total
8/ 1/56	negative	negative	15%	normal	normal	normal	2.5	total

and indirect 1.1 mgm. %. Serum proteins, alkaline phosphatase, thymol turbidity and cephalin flocculation tests were normal.

COMMENTS

The pathognomonic finding in chronic idiopathic jaundice is coarse brown centrolobular pigmentation within the liver cells. Tiny amounts of pigment may sometimes be found in the Kupffer cells. Focal necrosis, portal infiltrates, post necrotic scarring, and fatty metamorphosis are sometimes found but these changes are thought not to be related to the basic defect. The characteristic pigment of chronic idiopathic jaundice shares many of the histological and chemical properties of the lipofuscins[3]. Jaundice may result from an inherited inability to excrete direct bilirubin.

A brother of the patient was found to have jaundice without hepatomegaly. In only one instance has the disease been reported in siblings although a family history is common.

Jaundice may be the only complaint. Right upper quadrant abdominal pain, weakness and fatiguability are common complaints. Anorexia, nausea, vomiting, and diarrhea occur less frequently. Hepatomegaly accompanies jaundice in about one-half of the cases. Hepatic function is shown to be impaired by increased thymol turbidity and positive cephalin flocculation determinations. Increased serum BSP retention, direct bilirubin, alkaline phosphatase and urine urobilinogen reveal the excretory function of the liver cells to be defective. The increase of urobilinogen in the urine and the relatively small increase in alkaline phosphatase is evidence that the biliary system is not completely obstructed. The absence of anemia and significantly elevated indirect bilirubin indicates that hemolytic jaundice is not a factor in chronic idiopathic jaundice. The characteristic pigmentation of the liver will rule out chronic hepatitis and Gilbert's disease. The latter has been variously designated constitutional hepatic dysfunction, familial non-hemolytic jaundice, and physiologic hyperbilirubinemia. In Gilbert's disease there is a lack of "glucuronyl transferase"[7] which is essential in the conversion of indirect bilirubin to direct bilirubin. This results in elevated serum indirect bilirubin. The urine is negative for bilirubin.

Chronic idiopathic jaundice probably does not alter life expectancy, however, jaundice may be intermittent or even persistent. Dubin[1] states, "The patients should be apprised of the benign nature of their illness and encouraged to lead normal lives lest they become the victim of an overlay of symptoms of psychosomatic origin."

SUMMARY

1. A case of chronic idiopathic jaundice simulating chronic infectious hepatitis is presented. Liver biopsy showed the characteristic coarse brown centrolobular pigmentation. The course of the patient's disease was followed four years. His brother, when examined, had asymptomatic jaundice of ten months' duration.

2. The etiology of this disease is unknown but it may be an inherited inability to excrete direct bilirubin. The coarse brown pigment shares many of the chemical and histological properties of the lipofuscin family. The disease is differentiated from chronic hepatitis, hemolytic jaundice, and Gilbert's disease.

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In the New Testament it is taught that willing and voluntary service to others is the highest duty and glory in human life . . . . The men of talent are constantly forced to serve the rest. They make the discoveries and inventions, order the battles, write the books, and produce the works of art. The benefit and enjoyment go to the whole. There are those who joyfully order their own lives so that they may serve the welfare of all.

Sumner

Arterial Hemografts: Bypass for Obliterative Vascular Disease*

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The development of grafting procedures to replace or bypass segments of diseased arteries is one of the really significant surgical advances in recent years. This comes at a time when our geriatric population is increasing, and we must necessarily become more concerned with degenerative diseases. Of course, many conditions affecting the aorta and peripheral arteries can be relieved by grafting, including aneurysms, thromboses, arterial trauma with complete division, congenital vascular disease, and tumors. By far the most common indication, however, is obliterative disease secondary to atherosclerosis. These individuals because of an inadequate blood supply distal to the obstruction, develop all the signs and symptoms of ischemia. Carotid obstruction may produce senile psychoses or cerebromalacia with epilepsy. Obstruction at the aortic bifurcation or below produces intermittent claudication, rest pain and eventually ischemic ulcers and gangrene. The primary reason for re-establishing arterial continuity in the latter group of patients is to restore the muscular function of the extremities by improving their blood supply. Procedures such as lumbar sympathetic ganglionectomy have proved of little value in this symptom complex because they do not augment the blood supply sufficiently. The only satisfactory treatment of this disease is to restore a column of arterial blood sufficient to meet the metabolic needs of the extremity either by replacement of or shunting around the obliterated proximal segment. Until recently it has been thought that resection of the occluded arterial segment with replacement by homologous graft with end-to-end anastomosis was the preferred technique. However, following the pioneer work of Kunlin with venous autografts and later modified by Crockett for arterial homografts, the technique of end-to-side anastomosis has proved technically easier to accomplish and has a much higher incidence of graft patency[1],[6]. Linton and Menendez[6] in a recent comparison of long-term results with vascular anastomosis found that only 40 per cent of their end-to-end grafts remained patient, while 80 per cent of their end-to-side remained so. They ascribed this marked difference to the more difficult technique, particularly if endarterectomy had been done, to have sufficient pliable tissue to do the end-to-end anastomosis, and to the inevitable narrowing of the anastomotic site. Conversely, end-to-side anastomoses are made actually larger than the lumen of the vessel and may be placed in a soft, pliable area of the host artery[6]. Anastomoses may be placed at the optimum level for blood flow without sacrificing essential collaterals[1]. In the event the graft should thrombose, the patient is no worse than preoperatively. However, with end-to-end anastomosis, he may very well lose an extremity.

Homografts were used in this series primarily because there has been sufficient experience to show that they can be handled well technically in almost any location and they have stood the test of time with a minimum of deterioration and aneurysmal formation. Also, it has been shown by Harrison[3] and others[7] that although synthetic grafts do as well or better than homografts in the larger vessels, they have a much higher incidence of thrombosis in arteries 8 mm. or less in diameter. The end-to-side technique used is essentially that described by Linton[5].

A section of host artery with a soft, pliable area approximately 3 to 4 cm. in length is isolated between two blood vessel clamps. A longitudinal incision is made into the lumen of the vessel, the length ranging from two to three times the diameter of the host artery, and should avoid any atheromatous plaques. The end of the homograft should then be cut straight across. A longitudinal slit is made from the cut end, equal in length to the incision in the host artery. The squared corners are rounded off. The proximal and distal ends of this ellipse are then secured to the respective ends of the incision in the host artery with everting horizontal mattress sutures of No. 5-0 arterial silk. The anastomosis is completed by suturing the sides of the graft to the sides of the incision in the host artery with simple over-and-over suture, utilizing the needle ends of the previously placed mattress sutures. This produces a funnel-like opening between the host artery and graft; and as the sutures go only part way around the circumference of the host artery, most of this wall is free to distend.

Twelve cases of end-to-side anastomosis have been performed in this series; five representative cases are reported: one bifurcation graft, aorta to external iliacs bilaterally; one external iliac to popliteal; one common femoral to superficial femoral; and one common femoral to popliteal; and one aorta to right external iliac.

CASE REPORTS

Case 1. W. O., a sixty-six-year-old diabetic Negro

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*From the Departments of Surgery, Veterans Administration Center and University of Mississippi School of Medicine, Jackson, Mississippi.

the graft would not remain patent due to the marked atherosclerosis of the distal vessels.

Case 3. M. A., a thirty-six-year-old white female, was admitted to the Veterans Administration Center, Jackson, Mississippi, complaining of intermittent claudication of the right leg of two years' duration. She had previously been hospitalized in New Orleans for the same complaint and had a right common iliac thrombo-endarterectomy and right lumbar sympathectomy performed in March 1957.

At time of present admission, she was unable to walk 50 feet without severe right calf pain which was relieved only by rest. Physical examination was essentially negative except for complete absence of peripheral pulses of the right lower extremity, including the femoral. There were small gangrenous areas on the tips of the first and fifth toes. An aortogram revealed segmental obstruction of the right common iliac artery with a good distal outflow tract. On January 30, 1958, aortic bifurcation and common iliac artery were explored, and the area of previous endarterectomy was found to be completely occluded. There were atheromatous plaques involving the distal aorta, but not obstructing the left common iliac. Consequently, a bypass homograft was placed between the aorta and the right external iliac artery. There was immediate resumption of peripheral pulses, gangrenous areas healed, and the patient is now walking long distances without claudication.

Case 4. W. E. G., a forty-six-year-old white man, was re-admitted to the Veterans Administration Center, Jackson, Mississippi, on July 19, 1956, with diagnoses of hypertensive cardiovascular disease with myocardial insufficiency, chronic non-suppurative frontal sinusitis and arteriosclerosis obliterans of the left external iliac and femoral arteries. The patient had had severe intermittent claudication involving the left lower extremity for two years, which had progressed to such an extent that he was unable to walk more than one block without resting. He also complained of severe night cramps in the left calf. On previous hospitalization a left lumbar sympathetic ganglionectomy had been performed without relief of symptoms. Physical examination revealed an obese, middle-aged white man in no acute distress. There was perforation of the nasal septum. Blood pressure was 140/80. There was absence of dorsalis pedis, posterior tibial, popliteal and femoral pulsations on the left. Pulsations were present on the right and of good quality. The left lower extremity was cooler than the right. There was also paleness on elevation and rubor on dependency on the left, which was not present on the right. A hemogram and urinalysis were within normal limits. Serology revealed a doubtful VDRL; quantitative

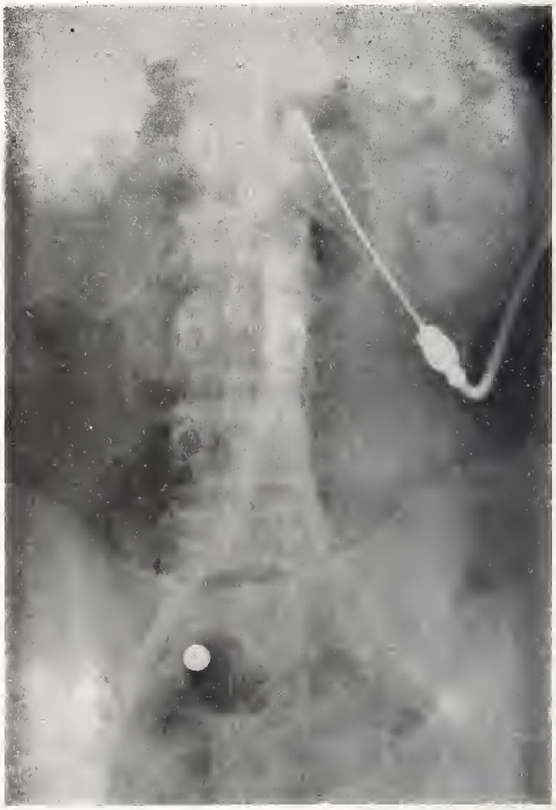

Fig. 4. Case 4. Postoperative aortogram showing complete obstruction of left external iliac artery.

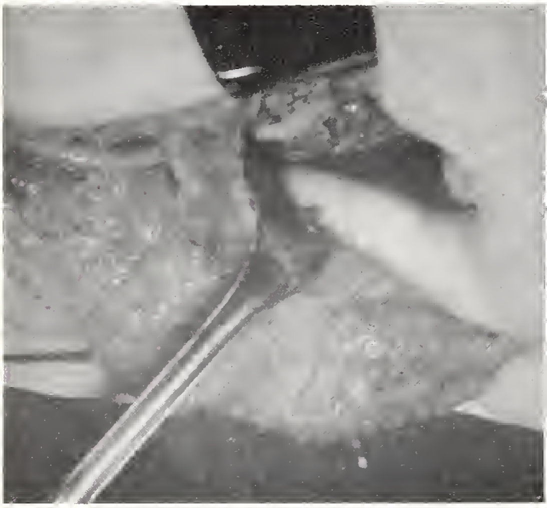

Fig. 5. Case 4. There was complete obstruction of the distal end of the left external iliac and the common and superficial femoral arteries, requiring a long shunt graft. This shows the details of the end-to-side anastomosis of the homograft to the popliteal artery.

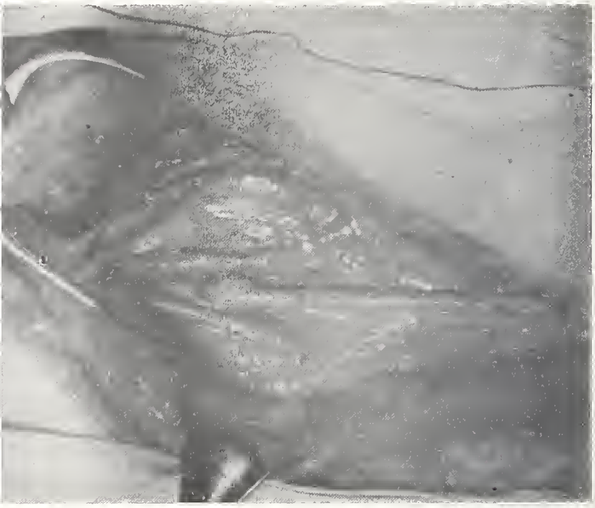

Fig. 6. Case 4. This shows funnel effect of the end-to-side anastomosis between the homograft and the left external iliac above the inguinal ligament.

VDRL, titer too low for reading; complement fixation was negative. Total cholesterol was 280 mg. per cent; cholesterol esters, 69 per cent. Prothrombin times ranged between 15 and 18 seconds on four occasions. X-ray of the chest was normal. Electrocardiogram revealed a borderline depression of ST^{1,2} and V^{4,5,6}, which might have been due to digitalis or to subendocardial ischemia. Electrocardiogram revealed occlusion of the left external iliac just above the inguinal ligament. (Fig. 4). Consequently, exploration was done on September 7, which revealed complete obstruction of the external iliac 5 cm. above the inguinal ligament on the left. The common femoral and superficial femoral arteries were obliterated down to the popliteal. A homologous arteriograft was placed from the external iliac to the popliteal, using the end-to-side technic. (Figs. 5 and 6). An arteriogram taken at the operating table showed complete patency of the graft with good filling of the distal vessels. The patient immediately had excellent bounding pulsations. He has been completely asymptomatic since surgery.

Comment: The preceding two cases illustrate the advantage of end-to-side technic in the peripheral vessels, in that a large funnel-shaped anastomotic lumen can be obtained with a consequent freer flow of blood under a higher pressure. Also, a more advantageous site for a proximal anastomosis can be utilized without compromising essential collateral circulation. Destruction of this important circulation could lead to loss of the extremity subsequent to thrombosis of an end-to-end graft.

Case 5. W. L. C., a fifty-nine-year-old white man, an architect, was admitted to the medical service of the Veterans Administration Center, Jackson, Mississippi, on November 26, 1956. He complained of intermittent claudication of the lower extremities of four years' duration, increasing in severity until at the time of admission he was able to walk only a half block before resting. He also had severe intermittent cramps with numbness in both lower extremities. Initially the pain appeared in the lower part of the leg and gradually ascended to involve the entire extremity and up into the back. There had been complete loss of sexual potency for a period of two years. Examination revealed a thin, well-developed, middle-aged white man. There was a mild increase in normal dorsal kyphosis. A grade III blowing systolic murmur was heard at the aortic area, which radiated up into the right neck vessels. The femoral, dorsalis pedis, posterior tibial and popliteal pulsations were not palpable bilaterally. A soft, blowing, grade II systolic murmur was heard most loudly over the lower edge of the umbilicus. It was also heard in the back over the fourth lumbar vertebra. Examination of the ocular fundi revealed moderate narrowing of the arteries and rather marked choroidal sclerosis. Rectal examination revealed 2-plus prostatic hypertrophy. Serology, urinalysis, white blood cell count, differential, hemogram and blood urea nitrogen were normal. X-rays of the chest showed slight emphysema. Cardiovascular size and configuration were normal. Healing rib fractures were reported on the left side involving the posterior segments of the third, fourth, and fifth ribs. Abdominal x-ray on November 28 revealed extensive enlarged calcific plaques throughout the abdominal aorta and its pelvic branches. An aortogram taken on November 29 revealed complete occlusion of the terminal aorta, with retrograde filling of the external iliacs which had irregularly narrowed lumens. (Fig. 7.) A diagnosis of Leriche's syndrome was made, and on December 12 an aortic bifurcation homograft by-pass from the abdominal aorta to both external iliacs was accomplished, using the end-to-side technic. (Fig. 8.) An associated bilateral lumbar sympathectomy was also performed. Immediately after the operation peripheral pulses were found to be of excellent quality and have continued to be so. Repeat aortogram two months postoperatively revealed patency of the aortic bifurcation graft. (Fig. 9.) The patient is now walking long distances without symptoms.

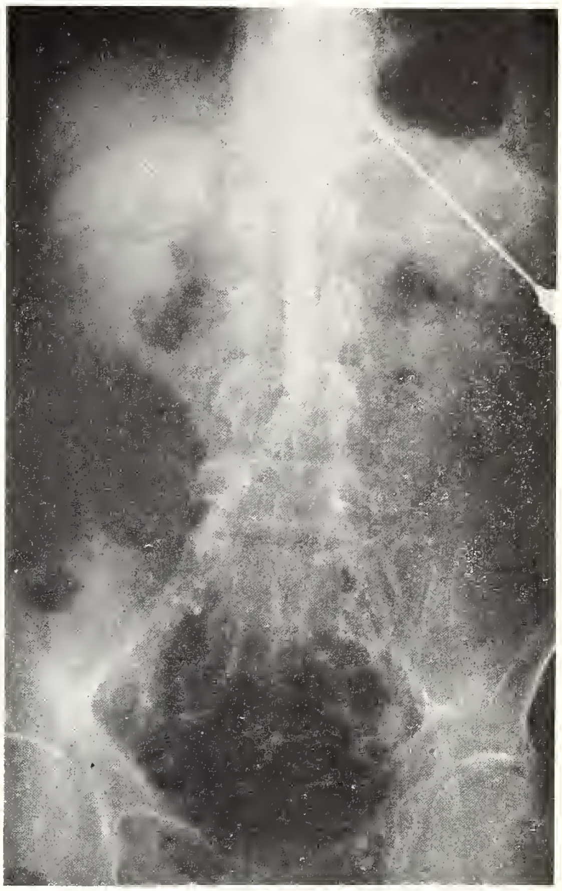

Fig. 7. Case 5. Preoperative aortogram showing complete obliteration of the left common iliac artery and what appears to be incomplete obstruction of the right common iliac. At operation distal end of aorta and both common iliacs were found to be completely obliterated.

Comment: Utilizing the technic of end-to-side anastomosis of the bifurcation graft to the host aorta proximally and to the external iliacs distally, as in this case, presents certain definite advantages. First, a larger anastomotic lumen can be fashioned without encroaching upon the normal distensibility of the host aorta posteriorly. Second, immediately proximal to the level of complete obstruction of the distal aorta there is usually a large thick posterior atheromatous plaque which must be thrombo-endarterectomized before a satisfactory aortic wall for

of unconscious patients treated prophylactically with antibacterial agents was compared to a similar group of patients not so treated. Routine coverage with antibiotics did not lower the incidence of serious infections. Since infections of the treated group were frequently due to resistant hospital strains of bacteria, they were less amenable to therapy. It was concluded from these results that antibiotics should be reserved until specifically indicated[5].

Although such data must be confirmed and extended, available evidence does not justify a program of routine prophylaxis with antibiotics for debilitated or susceptible medical patients. These agents must be carefully conserved and used only for well-defined clinical infections.

The surgical patient is unique since the risk of infection is somewhat greater than in medical patients and always an important factor bearing on the success of therapy. For this reason prophylaxis with antibacterial agents has been a common practice For the sake of clarity, this question may be best considered in the following manner.

All wounds are contaminated with bacteria to some extent. Traumatic wounds have a higher bacterial content than the elective clean wound. Traumatic wounds of more than eight hours' duration are considered infected, although 24 hours may elapse before there is clinical evidence of infection. Regardless of their duration all wounds must be carefully débrided of devitalized tissue to reduce the possibility of clostridial infections, i.e. *Clostridium tetani* and *Clostridium welchii.* These organisms have low invasive properties and depend upon an anaerobic environment provided by dead tissue for proliferation and elaboration of toxin. Danger of clinical tetanus may be largely eliminated by active immunization with tetanus toxoid or by passive protection with tetanus antitoxin.

Other bacteria found commonly in traumatic wounds are of low pathogenicity and seldom cause serious infection if there has been proper débridement within the eight-hour period of grace. The beta hemolytic streptococcus is an exception since it may cause an acute cellulitis of wounds. Penicillin is the drug of choice in this instance. Minor wounds of less than eight hours' duration generally require no antibiotic prophylaxis. They should, however, be carefully observed for evidence of infection during the early days of healing with antibacterial treatment administered as indicated.

The problem becomes more complex: (a) when the wound has been present for more than eight hours, or (b) when it is extensive and associated with considerable damage to tissue including bone, or (c) when penetration of a major body cavity has occurred. In all three instances prophylactic antibiotic coverage is generally recommended for a period of three to four days. If infection develops or persists despite use of antibiotics, all aspects of therapy must be re-evaluated. Penicillin continues to be the drug of choice unless the oral cavity or gastrointestinal tract have been penetrated. Due to spillage of enteric organisms in this instance, it is desirable to provide broader antibacterial coverage with a tetracycline or chloramphenicol. An oral dosage of 500 milligrams every four to six hours with either agent is usually adequate. When parenteral administration is required, 200 milligrams every four to six hours of the tetracyclines or 1.0 grams of chloramphenicol every 12 hours should be sufficient. All antibiotics, including penicillin, should be given intravenously in the event of shock[6].

There is little difference of opinion among surgeons concerning antibiotic usage in traumatic wounds. The clean case as typified by elective procedures presents a more complex problem since it is in this area that prophylaxis with antibiotics has been practiced most indiscriminately. In selected instances there is no doubt of the advantage gained by preparing patients preoperatively when contamination of the operative field may be anticipated[7].

Adequate preoperative sterilization of the bowel has facilitated surgery of the gastrointestinal tract as reflected in lower mortality rates and improved healing of wounds. Experience indicates ideal sterilization is best accomplished by antibacterial agents poorly absorbed from the bowel and which have a broad antibacterial range. Such drugs should be of low toxicity in the gastrointestinal tract but prevent emergence of resistant strains of bacteria. Poth has described the effectiveness of oral neomycin and sulfathalidine in preoperative preparation as shown by the consistent and rapid reduction of bacterial counts in the intestinal tract. Persistence of drug in the intestinal tract during the period of postoperative ileus prevented bacterial growth while wound healing was under way. Complications due to emergence of resistant micrococci or yeast were uncommon[8].

Perhaps of equal value has been the use of preparatory antibacterial therapy in patients with suppurative pulmonary disease. Aggressive surgical management of fibro-cavitary pulmonary tuberculosis has been made possible with the tuberulostatic drugs. Similarly, resection of pyogenic pulmonary foci has been made a safer procedure by preoperative treatment with antibiotics. The risk of endobronchial spread or reactivation of quiescent foci has been largely eliminated by adequate preoperative therapy in both tuberculosis and suppurative lung disease.

As mentioned previously, one of the results of widespread antibacterial therapy is the increased prevalence of highly resistant strains of bacteria within hospitals. None has created more concern than the bacteriophage group III *Micrococcus pyogenes*, var. *aureus*. Although resistant strains of this organism are known to have existed prior to the advent of antibiotics, there has been an alarming increase in the prevalence of highly resistant nosocomial varieties since the introduction of antibacterial agents[9]. Factors responsible for their persistence in hospitals, route of spread from patient to patient, and conditions predisposing certain patients to infections by micrococci are not yet clear. Unfortunately, postoperative patients become infected with these bacteria even though the wounds are initially clean.

One aspect of considerable interest, the rate and frequency hospitalized patients acquired micrococci, has been studied by Knight. The nasopharyngeal flora was determined daily in patients who received no antibiotics, were treated with penicillin, or who received tetracycline therapy. All strains of micrococci were identified by bacteriophage typing. Micrococci prevalent within the hospital could be distinctly identified by this method were coagulase-positive and highly resistant to antibiotics in general use. Untreated patients acquired hospital strains of micrococci slowly with less than 40 per cent of patients harboring the organism after 14 day' hospitalization. Patients treated with penicillin acquired these organisms more rapidly after starting therapy and 70 per cent were carriers after 14 days. Tetracycline therapy, however, not only increased the incidence of carriers of hospital micrococci to approximately 80 per cent but exceeded penicillin in accelerating the rate of acquisition of these strains[10]. If such data pertain to surgical patients, and there is no reason to believe they do not, they accentuate the dangers of prophylaxis with antibiotics in the clean surgical case since staphylococcal disease is intimately related to the nasopharyngeal carrier.

It is not known whether other bacteria, particularly the coliform group, behave in a similar manner. Prophylaxis with antibiotics will prevent infections by sensitive enteric bacteria in patients requiring indwelling catheters. Such patients, however, become infected with the same frequency as untreated patients but the infections are caused by drug resistant organism, particularly of the *Proteus* or *Pseudomonas* species [11].

Data of this order amplify very distinctly the hazard of prophylaxis with antibiotics in surgical patients with clean wounds. The availability of various antibiotics does not insure the surgeon of a means to protect patients from wound infections during elective procedures. Scientific technique with elimination of dead space, removal of devitalized tissue, and gentle manipulation of wounds is the surest and most reliable means of avoiding operative infections.

Awareness of the dangers of prophylaxis with antibiotics has promoted a critical appraisal of such practice in elective surgical procedures where antibacterial therapy has been regarded as mandatory.

McKittrick and Wheelock evaluated the effect of antibiotic treatment in elective abdominal surgery by comparing a group of patients treated with antibiotics to a group of their own who had not been treated. Although the groups were comparable as to age, type of procedure, etc., the numbers were not large enough to permit a statistical analysis. The procedures consisted of subtotal gastric resection, biliary tract surgery, resection of colon with anastomosis and closure of colostomy. It was concluded that antibiotic prophylaxis was of no value except for the following exceptions: (a) presence of chronic bronchitis; (b) pre-existing rheumatic valvular heart disease; (c) presence of an abscess around a lesion of the bowel; and (d) a very low anterior resection. In the last instance bleeding and spillage of intestinal contents may be very difficult to control[12].

Similar conclusions were made by Appleton and Waisbren after a study of prophylaxis with chloramphenicol in transurethral resections of the prostate gland. Alternate patients were treated with 1.0 gram of chloramphenicol daily both preoperatively and postoperatively. The incidence of complications was approximately the same in both groups although one patient treated with chloramphenicol died of a micrococcus endocarditis superimposed on a known rheumatic valvulitis. They believed prophylaxis with antibiotics was justified only when: (a) there was serious genitourinary infection; (b) severe debility existed; or (c) if there was pre-existing rheumatic valvular heart disease[13].

It is quite possible study of other surgical problems will further clarify the propriety of prophylaxis with antibiotics in more detail. In this direction Hoerr found antibiotics of no value in preventing pulmonary infections in patients with postoperative atelectasis. It was of greater value to correct the pulmonary obstruction which predisposed to infection[14].

(Continued on page 61)

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

Serum Glutamic Oxalocetic Transaminase, Lactic Dehydrogenase and Glumatic Pyruvic Transaminase Activity in Evaluation of Heart Muscle Damage — J. S. Ladue, American Journal of Cardiology, Vol. 7, Pages 308-314, March, 1958.

Myocardial infarction was produced in dogs by the injection of plastic spheres into the coronary sinus, and by tightening a ligature around the coronary artery. In every experiment, the serum glutamic oxalocetic transaminase (SGO-T) activity rose promptly with peak levels appearing nine to 23 hours later. Both the height and duration of the increased enzyme activity seemed to be proportional to the size of the infarct. In other experiments, the SGO-T activity increased 3 to 10 times but serum glutamic pyruvic transminase (SGP-T) activity increased 3 to 5 times, and the serum lactic dehydrogenase (SLD) activity increased 2 to 3 times over the normal.

Serums obtained 12 to 48 hours after the onset of acute transmural myocardial infarction, and daily thereafter, in 300 patients, were analyzed for SGO-T activity. In all but three patients, when the serum was obtained at the time of acute infarction, the SGO-T activity rose 2 to 20 times over the normal within the first 48 hours, and the height and duration of this activity seemed to be roughly proportional to the size of the infarct, as estimated electrocardiographically. In 10 patients with acute transmural infarction, in which the activity of all three enzymes were studied, the SGO-T activity increased 2 to 20 times over the normal, the SLD, 2 to 10 times over the normal, and the SGP-T, 1 to 3 times over the normal. There was no correlation between the SGO-T activity and the white blood cell count, the erythrocyte sedimentation rate, the presence of shock, the absolute levels of the blood pressure, the presence of heart failure, the location of the infarction or the use of anti-coagulant drugs.

There seemed to be much less correlation between the increased SGO-T activity in coronary insufficiency without transmural myocardial infarction, as only about one-third of the patients will show an increase in SGO-T activity. The SGO-T activity in patients with acute rheumatic fever, without carditis, was not elevated, but in those with extensive rheumatic carditis, the SGO-T activity was increased. The SGO-T activity was followed during the course of pulmonary infarction in seven patients and remained normal in all but one patient, whose peak activity was 80 units.

Comment: There seems to be an opinion prevalent in this locale that would have one believe that SGP-T activity and SLD activity do not increase particularly in acute transmural myocardial infarction. Both of these enzymes are usually increased. As mentioned above, the SGP-T, 1 to 3 times over normal, and SLD, 2 to 10 times over normal. The only difference between the reaction of these two enzymes and that of SGO-T, is that they occur at a later hour, with a lesser quantitative increase, and therefore, do not possess the immediate and obvious diagnostic value of the SGO-T titre.

PEDIATRICS

Etiologic Factors in Cerebral Palsy and Their Correlation with Various Clinical Entities S. Brandt and V. Westergaard-Nielsen. Danish M. Bull. 5:47-52 (Feb.) 1958 (In English) (Copenhagen).

The authors studied 628 cases of cerebral palsy. Prenatal factors, including prematurity, were found to be responsible for a comparatively large group of spastic diplegia cases, and the correlation was even higher for cases of symmetric diplegia and peraplegia than for those of asymmetric diplegia. Postnatal factors were found in 32 per cent of the patients with left hemiplegia and in 16 per cent of those with right hemiplegia. In many cases the histories gave no suggestion of etiology. There are cases where 2 or more factors may each be more or less responsible for the lesion; 20 to 25 per cent of the patients with cerebral palsy are in this cryptogenic group. Two factors stand out prominently: prematurity (27 per cent) and neonatal asphyxia (23 per cent.) A history of neonatal asphyxia involves a risk of more serious motor handicap than does one of prematurity. A lower percentage of normal mental development was found in cerebral palsy children with neonatal asphyxia as the only known etiology than in a similar group where prematurity was the only abnormality in the early history. There was no case of cesearean section in the group. Lack of oxygen plays a dominant part in the etiology of cerebral palsy, particularly in the type characterized by bilateral extrapyramidal or mixed-pyramidal extra-pyramidal symptoms. Duration of anoxia is the factor which decides whether the newborn asphyxiated infant will escape cerebral damage. The role played by genetic factors seems to be minor. Obstetric prophylaxis against neonatal asphyxia should be able to prevent up to 23 per cent of all cases of cerebral palsy; the gain may be even higher in regard to severely handicapping sequels. Procedures preventing premature birth or complicating damage and anoxia to the parasagittal motor areas in the premature infant during and after birth will probably reduce the cases of spastic diplegia.

COMMENT: The spastic child is one of our greatest problems. I have a two-year-old child in my examining room now with a very hard convulsion. We have a very nice cerebral palsy institution in our state, and if we were going to make any comment other than complimentary, we would say if we had less government intrusion and more good medical and nursing attention, these patients would make greater progress toward general improvement.

ALLISON . . .

(Continued from page 58)

The indication of prophylaxis with antibiotics finally resolves down to the basic question of whether there is active infection or the chance of gross contamination in the operative area. There is general agreement that the dirty traumatic wound should be treated with antibiotics. When the operative procedure must traverse or involve an area of infection it is wisest to employ antibiotics. When the procedure is one of election and no contamination expected, antibiotics should be reserved until there is specific evidence of an infection.

Perhaps the problem is best summarized in the words of Pulaski, "The host is vulnerable to the unfavorable effects of 'routine' antibiotic prophylaxis by unnecessary exposure to the risks of allergic or other untoward reactions, some of them grave, and the risk of superinfections and the risk of establishing reservoirs of drug-resistant strains in the hospital and among patients and attendants. However, the greatest hazard of all is the development of poor scientific habits by the surgeon, especially if his reliance is on chemotherapy as a substitute for application of sound surgical measures"[15].

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Medical Center Miscellany

July 1, 1958, brought even more changes to the University Medical Center than this midcalendar new year has seen previously. A new school, a new department, a chairman appointed and another retired, all contribute to the changing face of a young and growing institution.

Dr. Hogg Retires

Dr. Ira D. Hogg, head of the anatomy department since 1946, retired from the chairmanship in July but will remain with the School of Medicine as professor of embryology.

In the 12 years since he joined the basic science faculty on the Ole Miss campus, Dr. Hogg witnessed more innovations in the school than any of his six predecessors.

Greatest of these was, of course, the shift from a two-year school in Oxford to a four-year school at the new Medical Center in Jackson which Dr. Hogg helped plan.

Dr. Hogg's staff was the first to cope with two admissions a year in Oxford and double-sized classes in Jackson. His department granted the first Ph.D. degree ever given by the University of Mississippi and helped initiate an M.S. in surgery program.

Born near Delphus, Kansas, on December 31, 1892, Dr. Hogg got his A.B., M.A. and Ph.D. degrees from the University of Kansas. While an instructor at Kansas, he taught the man who later became his Mississippi dean, Dr. David S. Pankratz.

He taught in the anatomy department at the University of Pittsburgh for the 20 years before coming to Mississippi at the behest of his former pupil, then newly promoted from the anatomy department chair to the medical school deanship.

Relinquishing his administrative post in compliance with the state retirement law, Dr. Hogg will, under that same law, be permitted to teach for at least three more years.

Anesthesiology Department

Dr. Leonard W. Fabian, whose appointment as professor and chairman of the anesthesiology department was announced earlier, arrived at the Medical Center in July to head up the newly formed department. Heretofore, anesthesiology has been a division in the department of surgery.

Coming to the Medical Center from Duke where he was an assistant professor, Dr. Fabian is an Arkansan and served a year as instructor of anesthesiology on the Arkansas School of Medicine faculty.

He is a diplomate of the American Board of Anesthesiology and a member of the American Society of Anesthesiologists, the International Anesthesia Research Society and the American Medical Association.

School of Nursing

The Department of Nursing Education in the School of Medicine became the School of Nursing in the University of Mississippi July 1. Miss Christine Oglevee, chairman of the department virtually since it was organized in 1949, was named dean of the school.

Enrollment in the basic nursing program leading to the B.S. degree is expected to reach 45 in September. Fifteen degrees were granted during the medical school commencement this year.

The School of Nursing also offers courses for registered nurses who wish to complete the requirements for a degree and sponsored its first postgraduate refresher course in June.

Residents Listed

Twenty-four residents joined the housestaff in July, bringing the total number to 59. Ten will complete their training by the end of 1958 or earlier.

Newcomers to the Medical Center resident group are Doctors James Spell, Ray M. Windham, Walter T. Treadwell, Jr., Jare Barkley, John W. Bowlin, Martin L. Dalton, Robert C. Field, C. Thomas Fitts and Coleman Pickle, general surgery; Thomas D. Corbett, ophthalmology; Jeffrey Holder and William Sanders, orthopedics; Donald E. Bebout, Perrin L. Berry, Robert A. Johnson and John C. Williams, medicine; William B. Gallagher, ob-gyn; Lamar H. Gillespie, ob-gyn; M. Bingol, J. Campbell Gilliland, and Norman J. Sheibling, pediatrics; Lewis Chatham and Vernon Medlin, radiology; and Benjamin Banaham, preventive medicine.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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MILDRED P. ANDERSON .... **Assistant Editor**

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NEW NURSE TRAINING

Development in medicine has been phenomenal, even in recent months. We can see its stride in our own state, and across the nation and the world. Hospital progress in our state has been wonderful; We are in the front ranks in building a fine hospital system. But many towns in our state still need modern up-to-date hospitals in part or in full. The Hill-Burton appropriation has been increased and we owe a debt of gratitude to many, especially to Senator John Stennis. His heart and soul is in the building of better hospitals and health clinics for his state. Our state legislature and our governor matched federal funds with an adequate state appropriation. With our superior health organization, scholarships for young men who want to study medicine, our system of modern hospitals, and our four-year medical school, Mississippi is taking its place in the medical sun.

Our medical scholarship system in Mississippi has dramatically helped the doctor shortage in our state, effecting an adequate balance. But we are still short on nurses. Only a handful of our hospitals still maintain training schools for nurses, the output insufficient to meet our need. A more adequate training program is necessary for several reasons: People are hospital-minded and go to the hospital more for all illness. Voluntary insurance has made hospital treatment obligatory and economical. But with insurance applying to illness in the home and our growing awareness that we can never build enough hospital rooms to accommodate every illness, the demand for bedside nursing will become much greater. There is therefore a growing conviction that the responsibility for training nurses be met not by the hospital alone but in large measure by the state. We point to the plan of utilizing our state-supported junior colleges and the Hill-Burton hospitals in an affiliated program. The first trial of this proposal is succeeding remarkably at the Northeast Mississippi Junior College-Northeast Mississippi Hospital, where seven first-year students are being augmented by twenty-seven applicants for the new session. The two-year course will be supplemented the third year with training at our University Hospital, Whitfield, and Sanatorium.

A DOCTOR ON THE BOARD

The Ripley Hospital in Tippah County is a little different in that it has a doctor on its board of trustees. This is contrary to the general rule, but we understand that the American College of Surgeons approves this plan. It has some advantages. The average doctor understands the problems of the sick patient better than the layman, or should. This is why many private hospitals have been able to make money and at the same time give the people good service. Dr. John Tate operated successfully a private hospital before the Hill-Burton facility came in and as a member of the board he seems to be rendering fine service.

The fifth annual meeting of the Academy of Psychosomatic Medicine will be held October 9-11, 1958, at the Park Sheraton Hotel in New

York City. The program will be devoted to "The Psychosomatic Aspects of Internal Medicine" and will include formal papers, panel discussions and luncheon conferences. The meeting will be open to all scientific disciplines, as well as psychologists, social workers and nurses. Information may be obtained from Dr. Bertram B. Moss, Suite 1035, 55 East Washington Street, Chicago 2, Illinois.

HONORED

On June 30, 1958, Mr. C. P. Loranz received the honorary degree of Doctor of Science from Erskine College in Due West, South Carolina. Erskine College was founded in 1839. It is a coeducational college and seminary of the Associate Reformed Presbyterian Church.

Mr. Loranz began his association with the Southern Medical Association in 1912. He was secretary-treasurer for many years and is now serving the association in an advisory and professional relations capacity, rounding out an unbroken connection of 46 years. He was "discovered" down in Alabama by the late esteemed Seale Harris who was in truth the spirit of the Southern Medical Association.

Mr. Loranz has held a post in the Presbyterian church for more than fifty years. To him this honorary degree is a fitting and a well-deserved tribute.

TENNESSEE VALLEY ASSEMBLY

The Tennessee Valley Medical Assembly will meet at the Read House, Chattanooga, Tennessee, September 29 and 30, 1958.

COURSES IN OBSTETRICS

The Woman's Hospital in New York City is offering two courses in obstetrics, limited to general practitioners. Each course is approved for 30 hours Category I credit by the American Academy of General Practice.

The courses are entitled "Ante-partum Care" and "The Conduct of Labor and Delivery". They will be given from October 16-30, 1958.

These are full-time courses running for a week each. Students will be expected to work in the clinics, and in the second course they will be assigned to patients in labor whom they will assist at delivery. Either one or both courses may be elected.

Physicians interested in this post-graduate instruction will please address Mr. Carl P. Wright, Jr., Woman's Hospital, 141 West 109th Street, New York 25, New York, and an application blank and prospectus will be forwarded.

AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS

The Second Annual Meeting of the American Association of Medical Assistants will take place October 31, November 1, 2, 1958, at the Palmer House, Chicago, Illinois. All medical assistants are cordially invited to attend. Each physician is urged to call this meeting to the attention of his assistant.

The purposes of the Association are stated as follows: To inspire its members to render honest, loyal and more efficient service to the profession and to the public which they serve. To strive at all times to cooperate with the medical profession in improving public relations. To render educational services for the self-improvement of its members and to stimulate a feeling of fellowship and cooperation among the societies. To encourage and assist all unorganized medical assistants in forming local and state societies. The AAMA is declared to be non-profit. It is not nor shall it ever become a trade union or collective bargaining agency.

Several states now offer fine educational courses with the cooperation of their colleges and universities which will help the assistant to become more valuable in the doctor's office.

The American Association of Medical Assistants would welcome the opportunity to give information concerning the organization and to assist with the formation of county and state societies. Inquiries may be addressed to Miss Hallie Cummins, Caro State Hospital for Epileptics, Caro, Michigan.

FOUR IN ONE

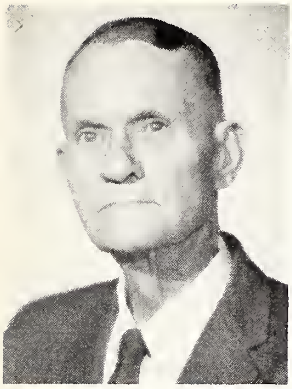
A four-in-one shot designed to immunize children against poliomyelitis, whooping cough, diphtheria and tetanus has been tested successfully in approximately 300 Detroit children, according to an article in the June 28 issue of the Journal of the American Medical Association.

Children who participated in the study ranged in age from 2½ months to 5 years. Seventy-five per cent, or 224 of them, completed the series of three monthly inoculations, and comparisons of bloods obtained before and after the inoculations showed favorable response, the article says.

The product, known by the trademark Quadrigen, is not yet available for commercial distribution. Developed by Parke, Davis and Company, it is the result of two years' research on combining polio vaccine with a three-in-one shot, diphtheria and tetanus toxoids and whooping cough vaccine (DPT), now in general use by pediatricians.

FIFTY-YEAR BIOGRAPHICA

CHARLES ADERSON PENDER



Charles Aderson Pender, son of Adolphus and Mary Pender, was born in Attala County, Mississippi, February 24, 1881.

After graduation from Kosciusko High School, he attended the University of Tennessee and was graduated on April 30, 1908. Following this, he did postgraduate work at Tulane and Vanderbilt Universities. He located in Kosciusko following graduation and has practiced there continuously.

For fifteen years, Doctor Pender served as part-time county health officer for Attala County. For forty years, Doctor Pender has served as a member of the board of stewards of the Methodist church. He is a Mason, member of Eastern Star, Rotary, and Kosciusko-Attala Chamber of Commerce.

Doctor Pender was honored with membership in the Fifty-Year Club—having practiced medicine for fifty years and rendered outstanding service to his fellowman and to his community.

Doctor Pender continues the practice of medicine at Kosciusko. Three of his six children have entered professional fields: one is a physician; one a dentist; and one a registered nurse.

CHARLES WHEELESS PATTERSON

Charles Wheeless Patterson, son of Samuel Briscoe and Martha Wheeless Patterson, was born September 16, 1884, at Port Gibson, Mississippi.

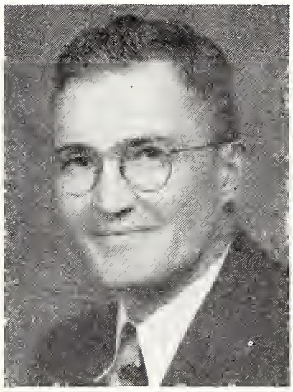
He received his early education in Port Gibson's elementary school and Chamberlain-Hunt Academy, where he completed one college year. He then spent two years at the University of Nashville and following this entered the Medical Department of Tulane University, New Orleans, Louisiana, where he received his medical degree on May 20, 1908. Following this, he located at Rosedale where he has spent fifty years in the practice of medicine and service of his fellowman. He did postgraduate study at New York Nursery and Child's Hospital in New York in 1916.

Doctor Patterson has served as president of the Mid-South Postgraduate Medical Assembly and twice as president of the Delta Medical Society. Also, he has served as vice-president of the Mississippi State Medical Association and as councilor for six years.

In 1956, Doctor Patterson was made a Fellow, American College of Cardiology. He currently serves as a member of the staff of the Rosedale Bolivar County Hospital.

For many years, Doctor Patterson has served his fellowman faithfully and well and has been made a member of the Fifty-Year Club. Doctor Patterson continues his practice of medicine at Rosedale where the local citizens on his seventieth birthday (September 16, 1954) honored him. On June 2, 1958, Tulane University awarded Doctor Patterson a fifty-year diploma.

THOMAS FRANKLIN CLAY



Thomas Franklin Clay, son of John Oliver and Fannie Lawler Clay, was born December 25, 1885, at Tutwiler, Mississippi.

He received his B.S. degree from Mississippi Agricultural and Mechanical College in 1905 and his medical degree from Vanderbilt University, Nashville, Tennessee, in 1908. On May 20, 1958, he was awarded a fifty-year pin by Vanderbilt. He did postgraduate study at Bellevue, Nassau, and William Parker hospitals in New York and also had special training in contagious and infectious diseases.

Following graduation, Doctor Clay began the practice of medicine in Tutwiler, where he has practiced for fifty years. During this time, he served as health officer for a number of years and served on the school board for a while. He was examining member of the local board for World Wars I and II and remains a member of Selective Service. For 30 years, he served as church school superintendent and is a life member of the board of stewards of the Methodist church.

For many years, Doctor Clay has served his fellowman faithfully and well and on June 19 was made a member of the Fifty-Year Club. This day was proclaimed by the mayor of Tutwiler as "Doctor Clay's Day" and appropriately observed. He continues to practice at Tutwiler fulfilling his mission and looking forward to the next fifty years.

DR. CARRUTH

The passing of Dr. Roy Carruth of Tupelo took from north Mississippi a fine practitioner and a useful man. A native-born Mississippian, his father was a physician before him. His wife was a fine helper and a great inspiration. Dr. Roy embodied the medical spirit of Tupelo, an able, safe and sound practitioner, and a fine citizen. He was an able business man, but did not let his business interests eclipse his love for medicine. He possessed medical integrity and an influence that was felt in every good cause.

ANNOUNCEMENTS

The Sellers and Sanders Clinic announce the association of T. K. Dampeer, Jr., M.D., in the practice of gynecology and obstetrics, 4414 Magnolia Street, New Orleans 15, La.

Walter H. Simmons, M.D., and Ross F. Bass, M.D., announce the association of John T. Kitchings, M.D., in the practice of obstetrics and gynecology, 514-B East Woodrow Wilson Avenue, Jackson 6, Mississippi.

Dr. William E. Noblin, Jackson, Mississippi, has accepted a position with the Mississippi State Board of Health as director of the Division of Maternal and Child Health to be effective on July 1, 1958, according to Dr. Felix J. Underwood, executive officer, and Dr. A. L. Gray, assistant executive officer.

Thomas K. Williams, Jr., M. D., announces the opening of his office for the practice of General and Thoracic Surgery at Suite 413 Medical Arts Building, Jackson, Mississippi.

PSYCHOPHARMACOLOGY

A Section of Psychopharmacology, as a part of the Fourth International Congress of Psychotherapy, will meet in Barcelona September 1-7. This Section of Psychopharmacology will be devoted to the practical, scientific non-speculative aspects of the growing body of knowledge of the biochemistry, pharmacology and therapy of normal and abnormal mental activity.

The official languages for the Congress are: English, French, German and Spanish.

Woman's Auxiliary

At the annual meeting of the Auxiliary to the Mississippi State Medical Association, conveying at the King Edward Hotel in Jackson, May 13 and 14, Mrs. Mayo Flynt of Meridian was elevated to the presidency, succeeding Mrs. A. E. Brown of Columbus. Mrs. James T. Thompson of Moss Point, is president-elect.

Other officers for the coming year are: Mrs. A. E. Brown, first vice president; Mrs. George Hicks, Pascagoula, second vice-president; Mrs. Wendell Holmes, McComb, third vice-president; Mrs. M. S. Riddell, Winona, fourth vice-president; Mrs. Thomas J. Safley, Jackson, secretary; Mrs. J. D. Simmons, Cleveland, treasurer; Mrs. Harvey F. Garrison, Jackson, historian; Mrs. Lamar Bailey, Kosciusko, parliamentarian; Mrs. Charles R. Gillespie, Laurel, corresponding secretary.

Councilors are: Mrs. William N. Crowson, Clarksdale, First District; Mrs. Chester A. McLarty, Oxford, Second District; Mrs. John Harrington, Columbus, Third District; Mrs. Paul B. Brumby, Lexington, Fourth District; Mrs. I. C. Knox, Jr., Vicksburg, Fifth District; Mrs. J. A. Lauderdale, Meridian, Sixth District; Mrs. J. P. Culpepper, Hattiesburg, Seventh District; Mrs. Eric Robbins, Brookhaven, Eighth District; Mrs. A. C. Hewes, Gulfport, Ninth District.

Committee chairmen are: Mrs. Verner Holmes, McComb, Program; Mrs. David Wilson, Jackson, Legislative; Mrs. Jack Atkinson, Brookhaven, *Bulletin;* Mrs. Edward North, Jackson, Nurse Loan Fund; Mrs. George Townsend, Forest, Recruitment; Mrs. Lee Reid, Jackson, Doctor's Day; Mrs. R. W. Crowell, Jackson, Mental Health; Mrs. H. H. McClanahan, Columbus, Research and Romance; Mrs. E. L. Gilbert, DeKalb, Memorial; Mrs. Lamar Arrington, Meridian, Budget; Mrs. A. T. Tatum, Hattiesburg, Revisions; Mrs. Lowry Rush, Jr., Meridian, AMEF; Mrs. James Royals, Jackson, Health; Mrs. Glen Pearson, Hattiesburg, Civil Defense; Mrs. John Egger, Drew, Safety; Mrs. Wendell Holmes, McComb, Public Relations; Mrs. M. S. Riddell, Winona, *Today's Health.*

ONE HOSPITAL

This hospital has gone along with modern improvements, both of exterior and interior, but has steadfastly refused to so organize occupational and recreational activities, that over-organization would destroy its primary purpose, which is to keep close to those lives it attempts to remake.

The Present Status of Cardiac Surgery*

JULIAN JOHNSON, M. D.†
Baltimore, Md.

The advances in cardiac surgery have been made so rapidly with the last ten or fifteen years that it is not only difficult for the average doctor to keep abreast of this field but is even difficult for an individual thoracic surgeon to be proficient in the many surgical procedures now being carried out. With the continued improvement in the heart-lung machine, it is now possible to work with some care and deliberation on the inside of the heart. There can be no doubt as further advances are made that many improvements in technic and know-how will greatly widen the scope and usefulness of the heart-lung machine. It would perhaps be worthwhile briefly to review with you some of the cardiac lesions which may be corrected at the present time and to point out the type of surgical procedure by which this may be done.

Ventricular Septal Defect

The ventricular septal defect is the one lesion in the repair of which the heart-lung machine is essential. None of the other methods of repair of ventricular septal defects has met with even reasonable success, so there is probably no justification at the present time for attempting repair of these defects without the heart-lung machine. The problem of closing a hole in the ventricular septum would seem to be a very simple one and, indeed, it may be if the defect is small. On the other hand, if the defect is large or is placed close to the conduction mechanism of the heart or is behind the leaflet of the tricuspid valve, it may be very difficult to assure closure of the defect and at the same time cause no inadvertent injury to the heart.

It is obvious that many patients have lived a normal or near normal life expectancy with ventricular septal defects, so that it is obviously not wise to subject every patient with a ventricular septal defect to operation in our present stage of development. At the present time, therefore, we do not advocate operation upon the patient with a ventricular septal defect with no symptoms and with normal pulmonary artery pressure. On the other hand, if the patient is in too great difficulty and with a pulmonary artery pressure approaching that of the aortic pressure, there is a great deal of doubt as to whether such patients can be taken through an operation satisfactorily. The ideal candidate for operation at the present time, therefore, is one who has a pulmonary artery pressure somewhere in between, generally in the neighborhood of 40 to 80.

Once the patient is placed on the heart-lung machine and the blood is no longer circulating through the patient's heart and lung, the ventricular septum is approached through an incision in the wall of the right ventricle. Considerable knowledge of the character and locations of ventricular septal defects is required on the part of the surgeon. If the defect is small, it may be closed by simple suture but if it is large, a patch of Ivalon sponge should be sutured in place to avoid tension on the suture line and fear that the sutures will pull out during the postoperative period. If the ventricular septal defect is completely closed, we have every reason to hope that the patient will have a normal life expectancy thereafter.

Atrial Septal Defect

Although a great many patients have been operated upon and had their atrial septal defects closed without the aid of direct vision, we are among those who believe that cardiac surgery has now reached the time when the blind closure of an atrial septal defect is no longer necessary. There can be no doubt that many proficient surgeons have been able to accomplish this in the past but we now have two technics available which will allow the closure of these defects under direct vision. We feel at the present time that the good risk patient, particularly children, can be operated upon safely with the use of hypothermia. We feel that the technic of hypothermia has become safe in our hands since we have avoided too low temperatures or too long occlusion of the circulation. We consider 90 degrees Fahrenheit as the optimal temperature. While it is probably safe to carry the temperature as low as 86, we have adopted the policy that if the temperature drops below this level, the patient should be rewarmed before the circulation is temporarily interrupted. The time of occlusion should not exceed four minutes. If we find that more than four minutes is required to close the atrial defect, the occluding clamps are removed from the great vessels and the blood is allowed to circulate normally for ten minutes before going back for a second period of direct observation and closure of the defect. By sticking to this principle of not more than a four-minute period of occlusion, with a temperature of 90 degrees, we have felt that the dangers of hypothermia have been removed. The one remaining danger is the fear of air embolism and this danger is chiefly that of being certain that the patient does not take a deep breath while the heart is open. A possible added precaution may be the practice of flooding the field with CO_2 while the heart is opened.

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In poor risk patients, particularly the adults with large hearts or with a reasonably high pulmonary artery pressure, or if there appears to be some unusual situation present, we feel that the use of the heart-lung machine adds some safety to the operation procedure. As a matter of fact, the chief reason for not doing all of these patients on the heart-lung machine is the tremendous increase in the effort of all concerned and the apparent safety of the hypothermia technic in the uncomplicated cases. We do feel, however, that one of these two technics should be used in most patients who are being operated upon for the closure of an atrial septal defect. We have come to feel that the hypothermia technic is so safe in children that we feel it can now be carried out as elective procedure in the five-to-ten-year-old group without waiting until the patient gets into severe difficulty.

Pulmonary Stenosis

A great many patients with pulmonary stenosis, without a ventricular septal defect, have been operated upon in the past by the closed technic. This has been done, as a rule, by placing some type of knife through the right ventricular wall. It was first done by Brock and a very nice knife to perform this procedure was perfected by Potts. We have felt that a guillotine type knife is very helpful in the valvular lesions.

The real problem in this disease, however, has been the ability to make an absolute diagnosis of valvular stenosis as opposed to infundibular stenosis, on the one hand, and to pick out the character of the valve, on the other hand. If the valve is megaphone in shape, it can be easily opened to a very satisfactory degree by the guillotine knife but if the valve is flat with a small hole in the center, it is difficult to open satisfactorily with any of the knives. It has been our feeling, therefore, that in general this is a lesion which should be operated upon under direct vision. If the curves obtained on cardiac catheterization are characteristic of a valvular stenosis, hypothermia is probably perfectly satisfactory, but our own policy at the present time is to do these patients on the heart-lung machine for fear of running into some infundibular stenosis or a valve that is difficult to handle in a short period of time. The results of operation upon this lesion are excellent and should carry a very low mortality.

Tetralogy of Fallot

We agree in theory that it would be fine if all the patients with the tetralogy of Fallot could be operated upon under direct vision and have the defect completely corrected. At the present time, however, we feel that this is not practical and that the technical difficulties of accomplishing complete correction of the defect, particularly in infants and small children, are very great indeed. In those clinics where the experience with this problem has been the greatest, most of the patients with the tetralogy of Fallot, at least above the age of two to four years, are operated upon under direct vision. At the present time, we are still using the shunt procedures in those patients under the age of about four who have to be operated upon. We have been telling ourselves that after they grow up and our technics improve that we may, at a later date, reoperate upon them and correct the inside of the heart. Whether that will ever come about, I am not entirely sure because certainly many of these patients do very well with the Blalock type operation. The patients in whom we are advocating operation at the present time by the open technic are primarily the patients with the so-called acyanotic tetralogy and the patients with the tetralogy who are over about twelve years of age. I strongly suspect that as our experience grows we will be doing more and more of the patients with tetralogy of Fallot by the open technic.

In the infants who are in such desperate condition that operation is required, we have been using the Potts operation and have felt that we have been able to get away with a considerably lower mortality in that group than with the Blalock, since we can be more certain of getting a functioning anastomosis. Certainly from fifteen pounds up, however, we have preferred the Blalock procedure because, by and large, we have gotten a greater degree of cardiac enlargement following the Potts operation.

Tricuspid Atresia

As far as I know, there is no method by which direct correction of tricuspid atresia may be accomplished. The shunt procedure is therefore used for this condition in order to get more blood into the lungs. Whether it is possible for the patient to get into difficulty postoperatively by the increased blood flow to the left atrium in closing the flaplike valve in the foramen ovale and whether this difficulty can be overcome by making a larger atrial septal defect is still open to some question.

Transposition of the Great Vessels

It would seem that transposition of the great vessels could be corrected satisfactorily by use of the heart-lung machine. To date, however, as far as I know, this has not been successfully accomplished. The simple transplantation of the two great arteries does not solve the problem because of the coronary arteries continuing to arise from the right side of the heart. Most of the efforts at the present time, therefore, are directed toward transplantation of the great veins or rearranging the atrial cavity so as to allow complete flow of the blood through the lesser and greater circulations. To date, we have had about as much success by making a large atrial septal defect, as suggested by Blalock, as by any other means. The transplantation of portions of the venous circulation, as suggested by Baffes, has also given some good results.

Coarctation of the Aorta

Correction of coarctation of the aorta can now be carried out as an elective procedure with great safety to the patient. There seems to be no real indication for the use of the heart-lung machine in this lesion with the exception of the infantile type of the disease.

We feel very strongly that the child with coarctation of the aorta should be operated upon before he reaches his teens and we feel that the preschool age is the ideal time to have this lesion corrected.

Although it is almost never necessary to use any type of prosthesis when operating upon a child with coarctation of the aorta, we feel that some type of graft or prosthesis should always be available when an adult with coarctation is operated upon because the vessels, by that time, have lost the elasticity which may be necessary in order to get a large opening and bring the remaining ends together. The results of operation for coarctation of the aorta should be good and the risk of the operation should be no more than five per cent.

Patent Ductus Arteriosus

The operation for patent ductus arteriosus was among the first cardiac surgical procedures to be carried out. We still feel that triple ligation with silk is a satisfactory method of obliterating a patent ductus arteriosus since we have done this in more than two hundred patients without being aware of a single recannulization of the ductus. On the other hand, if the ductus is short and wide, we routinely divide it and suture the two ends. We feel that the risk of operation for the patient with patent ductus arteriosus should not exceed one per cent and that all patients should be operated upon as a matter of election.

The only problem which remains at the present time with the patent ductus arteriosus arises in those patients who have developed pulmonary hypertension. It had been hoped for a while that when the patient with pulmonary hypertension and a patent ductus arteriosus had the patent ductus closed, the pulmonary hypertension would recede and the patient would become normal. This, unfortunately, has not been our experience in all cases. Whether it is possible to predict which of these patients will lose the pulmonary hypertension after closure of the ductus by means of the microscopic study of the pulmonary arterioles is being debated at the present time.

Mitral Stenosis

The operation for mitral stenosis has become fairly well standardized over the years and yet every surgeon who operates upon this disease certainly must feel that new technics and improvements in the technic are needed. The valve is often very badly damaged and it is not always possible to refashion the valve in a manner in which it can function normally. It has not yet become common practice throughout the country to do these patients on the heart-lung machine and yet it is difficult to believe that the refashioning of the mitral valve could not be done more satisfactorily under direct vision than by the blind approach.

The greatest cause of death from mitral stenosis is probably from embolic phenomena, either from blood clots knocked off at the time of operation or from calcific emboli which break off from the valve itself.

At the present time we operate upon mitral stenosis as a routine from the left side but, by and large, have operated from the right side when a second operation has become necessary.

The risk of mitral commissurotomy is certainly very low in the good risk patient and is comprised almost entirely of the danger of embolic phenomena. Certainly the risk is no more than five per cent. The overall risk in any given series of patients will depend, of course, upon the type of patients operated upon and may well run to 10 per cent or more if desperate risk patients are accepted for operation.

When the surgeon is operating upon the mitral valve and finds that it is badly calcified, particularly in the posterior commissure as is so common, he is immediately faced with the problem of whether he should make every effort to get the valve open and accept some increased risk from embolization. In recent years we have taken the point of view that we should make the effort to get the valve open and accept the increased risk. We feel that, by and large, we do more good in the overall picture by giving maximum improvement to our patients, even though some may suffer from embolic phenomena.

Mitral Regurgitation

Although several methods of operating upon patients with mitral regurgitation have been used in the past, it seems very probable that this can best be done by means of the heart lung machine, placing the suture in the posterior portion of the annulus under direct vision. It is our belief, as a matter of fact, that more and more patients with mitral stenosis who have an element of regurgitation will be operated upon by this technic. If the stenosis is primarily due to destruction of a portion of the mural leaflet, particularly posteriorly, a suture can be placed in the annulus so as to shorten the mural leaflet and bring it in approximation to the aortic leaflet. Although this is a new development in cardiac surgery, it seems more promising than any of the other methods previously used to correct mitral regurgitation.

Aortic Stenosis

The present operations for aortic stenosis, while very helpful, do not produce nearly as good results as those for mitral stenosis. This, no doubt, is due to two factors. First, the patient who first develops real symptoms with aortic stenosis is closer to the end of his rope than is true of the patient with mitral stenosis. Second, the aortic valve which is destroyed by calcification is much more difficult to refashion into a functioning valve than is the case with the mitral valve. I believe that our best and largest experience with aortic stenosis has been the opening of the valve by a relatively small dilating instrument inserted through the left ventricle. Certainly it has been our experience in the past that efforts to open the valve as widely as possible can be carried to a fault so that the instrument which we use at present opens only an inch and a quarter and with its use we have had our best results, carrying an operative mortality in the neighborhood of 15 per cent.

It would seem that it would be better to open the aortic stenosis under direct vision and it may well be that we will be doing all these patients this way in the not too distant future. However, at the present time we have confined the use of the heart-lung machine pretty much to the congenital type of aortic stenosis. We think it is wise that that type of patient be operated upon under direct vision, particularly in the young individuals, for fear of getting uncontrolled regurgitation by the blind dilation. Some surgeons are doing all of the patients with aortic stenosis under direct vision at the present time and it may well be that we will come to that point also. The operative mortality, however, which has been obtained up to the present time on the acquired type of aortic stenosis by the direct approach has not been as good as that by the transventricular approach.

One of the things that we need very badly is an aortic valve with which we may replace the diseased and badly calcified aortic valves. The Hufnagle valve which is now being used with indifferent success for aortic regurgitation is a ball type valve and so far has not been used proximal to the coronary arteries. We badly need some type of plastic valve with which we can replace the aortic valve proximal to the coronary arteries and some progress has been made in this respect, at least in the experimental laboratory. We are all hopeful that this may perhaps be one of the next great advances in this field.

Coronary Insufficiency

There are a number of surgical procedures which have been carried on in an effort to improve the coronary blood flow in the patient with coronary insufficiency. Beck has worked longer in this field perhaps than any other surgeon and he feels very strongly that patients with coronary insufficiency are improved by the Beck I operation. In our hands, the vast majority of patients who have had the Beck I operation have felt that they were improved by it. The greatest difficulty, however, has been that of judging the value of these procedures and whether the patient's blood flow to the myocardium has actually been increased sufficiently to justify the risk of operation. I, for one, believe that the blood flow to the myocardium actually is increased in most of these patients but the degree to which this occurs is uncertain and the problem of evaluating its risk against other methods of handling this disease presents a very perplexing problem. At the present time, I am willing to operate upon patients who have considerable angina but still apparently have enough myocardium to do something with if the blood flow were improved. I think probably that I myself would be operated upon under those circumstances. However, I certainly have never felt sufficiently strongly about it to try to sell it to my patients and, as a matter of fact, our series in this field has been very small.

Aortic Aneurysms

The problem of operating upon aortic aneurysms has been present with us for many years but great strides have been made in it in the last few years. The first great advance was the replacement of the aortic aneurysm by means of a homograft or prosthesis, either by means of hypothermia or a by-pass shunt. The development of the heart-lung machine has given us an easy and ready method of by-pass to the thoracic aorta and this has greatly simplified the replacement of aneurysms of this portion of the aorta by means of grafts. When the aneurysm is proximal to the left subclavian artery, the entire heart-lung machine is required but distal to that point, only the pump part of the machine is necessary. At the present time there appears to be very little limit to the amount of thoracic aorta which may be replaced by a prosthesis or homograft. When the arch of the aorta is replaced, it is necessary to supply blood to the brain through the carotids, as well as the rest of the body, during the period of by-pass. This has been successfully accomplished by my associates, as well as in several other thoracic centers throughout the country. The risk of this procedure is still high.

Summary

The present status of surgery as it involves certain cardiac lesions has been discussed. The heart-lung machine has now been used with considerable success in many clinics throughout the country, and the real problems now facing the surgeon are primarily which lesons can be corrected without the use of the machine and which lesions require the use of the machine for satisfactory correction. Undoubtedly, many improvements in the use of the machine will yet be made. The surgeon must still perfect certain technics for the correction of intracardiac lesions and we must look forward to further development of machines and prostheses in order to correct the many defects which occur in both congenital and acquired cardiac disease. It is an exciting time in an exciting field in which man's inspiration and industry may well be the chief limiting factors.

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Strangulation Obstruction: Pathophysiology and Management*

WILLIAM O. BARNETT, M.D., F.A.C.S.†
Jackson, Miss.

FOR SEVERAL DECADES there has been a sustained decrease in the mortality rate of intestinal obstruction. Factors contributing to the improvement in the prognosis of this condition include judicious replacement of water and electrolyte losses, effective decompression of the intestine by use of indwelling tubes, adequate replacement where blood loss is a factor and early operation in cases of irreversible obstruction. Although there has been improvement in the survival rates of all patients presenting this condition, the most striking advances have been made in the treatment of simple obstruction. In spite of the above advances combined with attempts over the years to effect early operation the mortality rate of strangulation obstruction has remained high.

It has become increasingly apparent that if the survival rate in strangulation obstruction is to be improved, then a strong effort must be exerted toward neutralization of the lethal agents of delayed cases. The identity of the toxins arising from strangulated bowel has never been firmly established, therefore, the first step in combating this problem was considered to be a more thorough understanding of the nature of the material responsible for death. The efficacy of certain modalities used in the treatment of experimental strangulation obstruction was the concern of the latter part of this investigation.

The results of experimental studies regarding various aspects of strangulation in over 500 dogs will be discussed under the following topics.

I. THE PERITONEAL FLUID OF STRANGULATION OBSTRUCTION
  A. Separation of the Toxic Fraction[13,11].
  B. Characteristics of Fractions[9].
  C. The Toxicity of Strangulation Fluid Arising from Various Segments of the Gastrointestinal Tract[1].
  D. In Vivo Physiologic Effects.
    1. Strangulation Fluid[9].
      a. Normal Animals Exposed to Fluid of Other Animals.
      b. Animals With Strangulation Obstruction Exposed to Their Own Fluid.
      c. White Blood Cell Response to Unaltered and Modified Fluid[11].
    2. Comparison of Physiologic Changes Following Administration of Clostridium Welchii Toxic and Strangulation Fluid[10].
  E. Alterations Produced by Neomycin[1].
    1. Inside Lumen of Strangulated Bowel.
    2. Inside Plastic Bag Outside Strangulated Bowel.
    3. Intraperitoneal Injection Along With Toxic Fluid.

II. THE TREATMENT OF STRANGULATION OBSTRUCTION
  A. Normal Animals Exposed to Peritoneal Fluid of Dogs Dying of Strangulation Obstruction.
    1. The Value of Peritoneal Lavage[6,7].
    2. The Efficacy of Peritoneal Lavage Combined With Antibiotics[5].
    3. The Influence of Massive Antibiotics[8].
    4. Immunization Against Strangulation Fluid[2].
  B. Animals Exposed to Their Own Fluid[12].

I. THE PERITONEAL FLUID OF STRANGULATION OBSTRUCTION

The dark, foul fluid resulting from strangulation obstruction is extremely toxic when injected into the peritoneal cavity of normal animals. Placement of gangrenous bowel into a plastic bag so that the animal is not exposed to the fluid results in marked prolongation of life. The conclusion that this material plays a major role in the lethal issue of strangulation obstruction cannot be escaped.

A. Separation of the Toxic Fraction.

Six adult mongrel dogs were anesthetized with intravenous Nembutal. Utilizing sterile technique a closed loop obstruction of a 10 cm. segment of ileum was created with encircling tape ties. The segment was strangulated by ligating its venous

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drainage. At, or shortly before death, the peritoneal fluid was collected for study. A portion of this fluid (300 cu. cms.) was centrifuged at 700 rpm. for 10 minutes. The supernatant fluid was separated from the sediment and each fraction was injected into the peritoneal cavity of four normal dogs in amounts equivalent to 3 cu. cms. per kilogram of raw fluid. All animals which received the supernatant fluid were dead within 24 hours. The dogs which received the centrifugate recovered. Another aliquot of fluid was centrifuged at 17,000 rpm. for 10 minutes. The supernatant fluid was injected into the peritoneal cavities of four adult mongrel dogs in amounts equivalent to 3 cu. cms. per kilogram. All animals recovered. A similar number of animals were given an intraperitoneal injection of the centrifugate. They were all dead within 18 hours.

These experiments indicate that the toxic fraction of the fluid was not removed when the speed of centrifugation was as low as 700 rpm. When the speed of centrifugation was increased to 17,000 rpm. the toxic component of the fluid was removed as evidenced by the fact that the supernatant material did not kill the recipient animals. The finding that it is possible to remove the toxic factor from strangulation obstruction fluid by high speed centrifugation indicates that bacteria are responsible for its lethal properties.

B. Characteristics of Fractions.

The non-toxic fraction retained the color of the original fluid thus indicating that the pigments resulting from hemoglobin breakdown were not responsible for the toxicity of the raw fluid. Another consideration of great interest is whether or not exotoxins are responsible for the toxicity of peritoneal fluid resulting from strangulation obstruction. It seems highly improbable that it would be possible to remove an exotoxin from fluid by centrifugation.

The toxic portion of the material was light tan in appearance (centrifugate). Gram stains revealed myriads of bacterial cells among which proteus vulgaris, beta hemolytic streptococcus, E. coli and Clostridium welchii were identified. Chemical and physical methods were used to sterilize the fluid. All sterile preparations proved to be non-toxic. Raw fluid, after passage through a Seitz filter, was also found to be non-toxic.

C. The Toxicity of Strangulation Fluid Arising from Various Segments of the Gastro-intestinal Tract.

Peritoneal fluid for this study was obtained by strangulation of the stomach (2 dogs), duodenum (2 dogs), jejunum (2 dogs), ileum (2 dogs), and colon (2 dogs). Twenty-five normal recipient dogs were divided into five equal groups. Each group was given an intraperitoneal injection of fluid (3 cc/kg.) which resulted from strangulation of one of the segments of the gastro-intestinal tract.

No. Animals Injected	*Organ Strangulated*	*Survivors*
5	Stomach	5
5	Duodenum	4
5	Jejunum	3
5	Ileum	0
5	Colon	0

It is concluded that the toxicity of peritoneal fluid resulting from strangulation obstruction increases from the upper to the lower gastro-intestinal tract. This finding is consistent with a bacterial etiology for the toxicity of strangulation fluid since the bacterial flora from the stomach to the colon increases both quantitatively and qualitatively.

D. In Vivo Physiologic Effects.

1. Strangulation Fluid.

The purpose of the following studies was to determine the in vivo physiologic effects of the intraperitoneal and intravenous injection of strangulation obstruction fluid into normal animals. The fluid was collected from seven donor animals utilizing the method previously described.

Four normal dogs received an intraperitoneal injection of the material in the amount of 4 cu. cms. per kilogram. Control samples were secured for determination of red, white and differential blood counts. Other studies included hematocrit, platelet counts, prothrombin time, clotting, plasma hemoglobin, sodium and potassium. The temperature, respiratory rate and pulse rate of each animal was also recorded. Determinations of all the above mentioned values were repeated at 3, 5 and 7 hour intervals. The white blood cell count dropped from a mean control value of 8,300 to 2,213 seven hours after injection of the fluid. Although it was not consistently true most animals were found to have a relative increase in lymphocytes. An increase in the hematocrit and red blood cell count was found in all animals. The mean plasma hemoglobin value ranged from a control of 2.87 to 20.13 milligrams per cent after seven hours. There was no significant alteration of the prothrombin time. The blood platelet counts as well as the clotting times remained within normal limits. The plasma sodium levels remained unchanged. Although there was a slight progressive rise in the serum potassium concentration, this value was never above 5.1 meq./L. All animals showed an increase in the rate of respiration. In most cases there was a slight rise in temperature. Changes in the pulse rate were not significant.

A slow intravenous drip of the fluid in the amount of 4 cu. cms. per kilogram was given to four animals. The same studies that were described above were carried out on these animals. Except for a rise in hematocrit of smaller magnitude and higher elevation of clotting time, the findings were similar to those resulting from intraperitoneal injection of fluid.

The purpose of the next group of experiments was to determine the response of animals to fluid from their own strangulated bowel. The ileum of four adult mongrel dogs was strangulated in a manner similar to that described above. The altered bowel was then placed in a plastic bag, tied securely with umbilical tape and returned to the abdominal cavity. Twenty-four hours later the animals were reopened and exposed to the fluid that had accumulated within the bag. Control blood samples were secured before exposure to the fluid for determination of white blood cell counts, erthrocyte counts, hematocrit, plasma hemoglobin, sodium and potassium. Similar determinations were obtained at two-hour intervals until death of the animal occurred.

The most striking change following exposure of the animal to its own strangulation fluid was a severe progressive leukopenia. In one typical animal this value fell from 59,800 to 5,900 within two hours. All animals exhibited a gradual rise in the erthrocyte count and the plasma hemoglobin.

White Blood Cell Response to Unaltered and Modified Fluid.

Thirty-six adult mongrel dogs were used. Ten animals served as donors for peritoneal fluid following strangulation of a closed loop of lower ileum. White blood cell counts were made at 2, 4, and 8 hour intervals after injection of the following materials into the peritoneal cavities of normal dogs.

Group 1. Saline; Group 2. Strangulation obstruction fluid (3 cc/kg.); Group 3. Strangulation obstruction fluid (3 cc/kg.) (these animals had received three previous injections of .2 cc/kg. at weekly intervals). Group 6. A segment of strangulated bowel was placed in a polyethylene bag so that the animals (a.) were given the centrifugate in an amount equal to 3 cc/kg. of unaltered fluid while (b.) the remainder received a similar amount of supernatant fluid. Group 8. Fluid autoclaved (3 cc/kg.)

Group	*No. dogs*	*Mean WBC Control*	*2 hrs.*	*Values X10³ 4 hrs.*	*8 hrs.*	*Survivors*
1	2	12.9	14.3	15.8	16.9	2
2	3	8.9	3.1	2.3	2.2	0
3	3	8.2	3.7	3.8	9.2	3
4	3	10.0	6.7	7.9	18.6	3
5	3	17.3	8.0	10.7	15.8	3
6	4	38.6	4.5	died		0
7a	3	13.3		4.5	3.0	0
7b	3	8.9		10.2	22.5	3
8	2	8.9	9.4	9.2	15.8	2

It is concluded that leukopenia consistently follows the intraperitoneal injection of toxic preparations of strangulation obstruction fluid. Any alteration of the fluid so as to render it non-toxic produces leukocytosis in the recipient animal. Depending upon whether or not a leukopenia develops, it is possible to predict the toxicity of strangulation obstruction fluid.

2. Comparison of Physiologic Changes Following Administration of Clostridium Welchii Toxin and Strangulation Fluid.

Qualitative tests have been used to demonstrate the presence of the alpha toxin of the Clostridium welchii in strangulation obstruction fluid. Whether or not this material plays a role of major importance in the lethal issue of this material has not been established. Previous experiments have indicated that it was possible to remove the toxic factor from strangulation obstruction fluid by high speed centrifugation. This was interpreted as being strong evidence against an exotoxin being responsible for the lethal effect of the fluid. In order further to clarify this aspect of the problem it was elected to compare the in vivo physiologic change resulting from the intraperitoneal injection of strangulation obstruction fluid with those occurring after intraperitoneal injection of the alpha toxin of Clostridium welchii.

The results of these experiments showed that following the intraperitoneal injection of strangulation obstruction fluid the recipient animal consistently exhibited a leukopenia. Following the intraperitoneal injection of the welch bacillus toxin a leukocytosis invariably developed. The rise in plasma hemoglobin was found to be much greater in animals which received Clostridium welchii toxin. Since the lethal properties of strangulation obstruction fluid can be predicted by whether or not it produces a leukopenia, it was concluded that this material probably did not owe its lethal properties to this exotoxin.

E. Alterations Produced by Neomycin.

A 10 cm. closed loop of strangulated ileum was created in three animals. Neomycin in the amount of 2.5 grams was placed inside the lumen following which a two-layer closure of the enterostomy was effected. The animals appeared well after the elapse of the 48 hours at which time they were sacrificed. The odor was that of fresh blood in contrast to the foul smelling material of untreated animals. Six normal dogs received an intraperitoneal injection of this fluid in the amount of 4 cu.

cms. per kilogram of body weight. All animals recovered.

The next series of experiments had the purpose of determining whether or not it was necessary for the neomycin to be inside the lumen of the strangulated bowel in order to render the fluid non-toxic. In three normal dogs a 10 cm. closed loop of strangulated bowel was placed in a plastic bag containing 2.5 grams of neomycin. The neck of the bag was securely fixed to normal bowel in order to prevent escape of its content. Forty-eight hours later the animals were sacrificed for collection of the bag fluid. This material was injected into the peritoneal cavity of eight normal dogs in the amount of 4 cu. cms. per kilogram. All animals recovered.

The purpose of the following series of experiments was to determine whether or not the simultaneous injection of neomycin along with a toxic dose of raw fluid would improve the survival rate. Toxic strangulation fluid was secured from six untreated animals according to the method previously described. It was injected into the peritoneal cavity of 15 normal dogs in the amount of 5 cu. cms. per kilogram. At the same time an intraperitoneal injection of the solution of neomycin was given to nine of the dogs so that each animal received 50 mgs. per kg. Six of the nine animals recovered. All animals which did not receive neomycin died. Similar results were obtained when chloromycetin was used[3].

II. THE TREATMENT OF STRANGULATION OBSTRUCTION

A. Normal Animals Exposed to Peritoneal Fluid of Dogs Dying of Strangulation Obstruction.

1. The Value of Peritoneal Lavage.

Peritoneal fluid resulting from strangulated intestinal obstruction was collected according to the method previously described. Twenty-eight normal dogs were given an intraperitoneal injection of this material in the amount of 3 cu. cms./kg.

Group	*No dogs*	*Category*	*Avg. Survival Time (hrs.)*
(1)	8	Fluid Not Removed	12.2
(2)	10	Fluid Was Aspirated From the Peritoneal Cavity After 5 Minutes	12.0
(3)	10	After 5 Minutes the Fluid Was Aspirated. The Peritoneal Cavity Was Then Thoroughly Irrigated With 1 Liter of Saline.	108

The survival time was significantly extended by lavage of the peritoneal cavity.

2. The Efficacy of Peritoneal Lavage Combined With Antibiotics.

Strangulation Obstruction fluid was injected into the peritoneal cavities of normal animals in the amounts listed below. Thorough irrigation of the peritoneal cavity was effected after various time intervals in all but one group. Most of the animals were given penicillin (600,000 units).

No. Animals	*Amt. of Fluid Given (cc/kgm.)*	*Time Fluid Remained in Peritoneal Cavity (mins.)*	*Penicillin*	*Pct. of Animals Which Survived*
2	3	10	X	100
4	3	10	0	0
4	3	20	10	0
2	5	10	X	100
4	5	20	X	100
8	5	30	X	87
8	5	45	X	62
8	5	60	X	37
8	5	Fluid Not Removed	X	0

In combination with penicillin, irrigation of the peritoneal cavity increased the percentage of survivors when the larger dose was given. The sooner irrigation was effected after injection of fluid, the better were the animal's chances for survival.

3. The Influence of Massive Antibiotics.

The purpose of the following study was to determine the influence of increased doses of antibiotics upon the survival rate of normal dogs following exposure to progressively larger amounts of strangulation fluid. The first table lists the results following intraperitoneal administration of strangulation obstruction fluid and neomycin.

No. Dogs	*Strangulation Fluid (cc/kgm.)*	*Neomycin (mgs./kg.)*	*Survived*
5	3	5	2
5	3	100	4
5	3	50	4
5	6	50	2
5	6	100	2

Neomycin protected effectively against the smaller dose of fluid but poorly when the amount was increased to 6 cc/kgm.

The following table lists the results of intraperitoneal administration of strangulation obstruction fluid and intramuscular injection of penicillin.

No. Dogs	*Strangulation Fluid (cc/kgm.)*	*Penicillin (Units/kgm.)*	*Survived*
5	3	75,000	0
5	3	100,000	5
5	6	100,000	3
5	8	100,000	2
5	8	300,000	4
5	12	300,000	0

Effective protection was obtained with large doses of penicillin when the amount of fluid was increased to 8 cc/kgm. When the amount of strangulation fluid was elevated to 12 cc/kgm., protection was poor.

The last group of animals received an intraperitoneal dose of strangulation fluid and neomycin along with intramuscular penicillin.

No. Dogs	*Strangulation fluid (cc/kgm.)*	*Neomycin (mgs. /kgm.)*	*Penicillin (Units/ kgm.)*	*Survivors*
5	12	100	300,000	4

The combination of intraperitoneal neomycin and intramuscular penicillin was more effective than either alone.

4. Immunization Against Strangulation Fluid.

Six dogs were given three intraperitoneal injections of strangulation fluid in the amounts of .2 cc/kgm. at weekly intervals. They were then given an intraperitoneal injection of fluid along with an equal number of untreated dogs.

No. Dogs	*Strangulation Fluid (cc/kgm.)*	*Category*	*Survivors*
6	3	Immunized	0
6	3	Not Treated	0

It is possible for animals to acquire immunity against the toxic effects of strangulation fluid.

B. Animals Exposed to Their Own Fluid.

In all the foregoing experiments the animals were exposed to strangulation obstruction fluid obtained from other dogs. Moreover, the recipient animals were not subjected to the harmful effects of fluid, blood and electrolyte loss as well as the morbidity attending resection and anastomosis of gut. The following experiments were designed so that the time of exposure of animals to their own strangulation fluid could be effectively controlled. Forty dogs were divided into five groups. A 10 sm. closed loop of strangulated ileum was placed in a plastic bag. Twenty-four hours later the animals were reoperated for exposure to the accumulated fluid (4 cc/kgm.), resection of the gangrenous bowel and anastomosis of the normal bowel.

RESULTS

Group	*Category*	*Mean Survival Time (hours)*
I	—Fluid Not Removed From the peritoneal cavity	7.6
II	—Fluid Aspirated After 5 minutes	6.7
III	—Fluid Aspirated After 5 minutes —Peritoneal Cavity irrigated	23
IV	—Fluid Not Removed —Antibiotic given	13
V	—Fluid Removed After 5 minutes —Antibiotic given —Peritoneal Cavity irrigated	27 (40%)

All animals of the first four groups died. In Group V, 60 per cent recovered.

CONCLUSIONS

1. The peritoneal fluid which results from strangulation obstruction is toxic when injected into normal animals.

2. This material plays an important role in the lethal issue of this condition.

3. The life of experimental animals is significantly prolonged by placing strangulated bowel in a plastic bag so that the animals are not exposed to the fluid.

4. The lethal component of strangulation fluid can be removed by high-speed centrifugation.

5. Passage of strangulation fluid through a Seitz filter renders it non-toxic.

6. Exotoxins are probably not responsible for the lethal properties of strangulation fluid.

7. Bacterial cells must be present in order to maintain the toxicity of the fluid.

8. Among the bacteria present in strangulation fluid are proteus vulgari, beta hemolytic streptococcus, E. coli and Clostridium welchii.

9. Products of hemoglobin breakdown are not responsible for the toxicity of fluid.

10. The toxicity of peritoneal fluid resulting from strangulation of various segments of the gastro-intestinal tract increases from the stomach to the colon.

11. Administration of toxic strangulation obstruction fluid produces a severe leukopenia. A rise in hematocrit was also demonstrated.

12. Following fractionation of fresh strangulation fluid, a leukopenia is observed after administration of the toxic portion while a leukocytosis results from injection of the non-toxic fraction.

13. Any alteration of strangulation fluid so as to render it non-toxic produces leukocytosis in recipient animals.

14. In vivo physiologic effects of strangulation obstruction fluids are quite different from those seen following administration of Clostridium welchii toxin.

15. When neomycin is placed inside a loop of strangulated ileum, the resulting fluid is non-toxic.

16. Non-toxic fluid also results from the placement of neomycin in a plastic bag along with neomycin.

17. The intraperitoneal injection of neomycin

along with toxic fluid markedly improves the survival rate of recipient animals.

18. Irrigation of the peritoneal cavity of animals exposed to toxic strangulation obstruction fluid improves the survival rate.

19. The combination of antibiotics and irrigation is more efficacious than either alone in treating animals exposed to strangulation fluid.

20. The combination of intraperitoneal neomycin and parenteral penicillin gives better protection against large doses of fluid than either alone.

21. Normal animals may be immunized against an otherwise lethal dose of strangulation obstruction fluid.

22. In the treatment of animals with experimental strangulation obstruction, peritoneal irrigation improves the survival time. This was alone observed following the administration of penicillin but the best results were obtained when both were used.

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Diagnosis and Treatment of Headaches*

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Headache is one of the most common complaints heard in the practice of medicine. It is a symptom associated with many pathologic states, physical and mental. This paper will deal primarily not with those headaches associated with organic disease but with those which are functional—that is, those in which there are no structural changes to account for symptoms.

There is no problem in medicine more vexing to patient and physician than that of these headaches. All too often the headache patient, who is usually looked upon by his doctor as "a headache" is dismissed with some analgesic without an attempt being made to arrive at a specific diagnosis. Failure in these instances is invariable and leads the poor patient to making weary rounds of doctors' offices seeking relief which is not forthcoming, or worse, continuing to demand relief until the doctor in desperation prescribes narcotics which compound the tragedy of the situation by raising the specter of addiction.

It is distressingly true that very few people can be cured of their headaches but if accurate diagnosis is attempted by an alert and interested physician and rational therapy prescribed the patients will be helped immeasurably.

Every patient being evaluated for headaches should have a complete history taken, a thorough physical examination done, including a careful and detailed neurological; and basic laboratory studies such as blood count, urinalysis and x-ray of chest. In addition, any other studies indicated by the information gained in the initial workup should be carried out.

It is true that patients with headaches as the presenting complaint will almost invariably have symptoms referable to other systems also. These should be evaluated properly and promptly and treated, for there is no other situation in which it is more important to treat the patient as a whole and not just one or more of his symptoms, than in the patient with headaches.

If the evaluation outlined above demonstrates no organic basis for the headaches and the patient has no symptoms suggestive of it, such as diplopia or seizures, it is usually safe to proceed on the assumption that the difficulty is functional; however, if there is doubt it is wisest to proceed with more involved and specialized investigative procedures such as lumbar puncture, skull films, electroencephalogram, pneumoencephalogram, etc.

It should also be remembered that the patient should be constantly re-evaluated by the physician. Diagnosis of a functional state, even if correct, is no protection against development of organic disease. There is no place in good practice for smugness or rigidity of opinion.

Tension headaches are the most frequent type of headache complained of by patients. They are usually described as a tight bandlike or caplike sensation over the scalp, or feelings of pressure within the head, or sore spots here and there over the scalp and neck[1]. They may be frontal, occipital or bilateral in location and come on with no prodromata. Their frequency and duration are variable. The pain is caused by contraction of the muscles of the head, neck and face, which is a voluntary but unconscious act. This type of headache is seen in patients who are under severe stress and/or are unstable, emotional and have underlying neuroses, and is usually psychogenic in the sense that repressed emotions are expressed as conversion symptoms[1].

Although the headache is the chief complaint, these patients will usually have functional symptoms related to any or all of the other systems of the body. It is especially important that the physician realize that patients having other types of headaches will often have tension headaches interspersed. This fact is not generally appreciated.

Temporary relief of the individual headache will usually be obtained by treatment with analgesics such as salicylates and mild sedatives. Massage and heat are also helpful. More permanent relief in the form of a remission will result only if the underlying precipitating factors or stressful situation is uncovered and corrected. In many years superficial psychotherapy which can be administered by any physician who will take the time will be spectacularly successful in relieving the situation. The administration of transquilizers may also be of help.

Migraine headaches are best considered a psychophysiologic disorder—that is, a condition in which conflicts in the subconscious cause upheavals in the autonomic nervous system with resultant physical symptoms. They are much more frequent in females and do not have their initial onset after the menopause. They usually do not occur during pregnancy and are almost invariably associated with tension headaches.

The personality of the migraine patient is characterized by ambition, excessively rigid standards for themselves, perfectionism, high intelligence, inability to express feeling, sensitivity, shyness, abnormal striving for success in spite of great personal sacrifice, and kindness and consideration for others. People subject to migraine are easily depressed, tire easily and wilt suddenly when overcome by fatigue.

The typical patient is short in stature and of a gracile habitus, and will give a history of having had motion sickness and/or "bilous spells" as a child; she is hypersensitive to all external stimuli, is much concerned about maintaining orderliness and punctuality and although she is frequently listless and complains of fatigue in the mornings, she gains strength and vigor as the day goes by. At an hour when the rest of the family is ready to retire she is usually in a frenzy of activity compensating for the lack of accomplishments of the morning. There is frequently a strong family history of headaches.

The migraine headache has certain well-recognized characteristics, however, the physician should be aware of the fact that the patient is usually more typical than the headache. Most patients can predict with accuracy the coming of an attack for they are euphoric and animated by unusual vigor. The attack itself is heralded by visual disturbances such as scotomata and hemianopsia This is followed promptly by gradual onset of pain which may begin on either side of the head, and which, when it reaches its height, is occampanied by photophobia, nausea and vomiting. It is not well recognized that the pain of migraine characteristically affects both sides of the head at one time or another.

The relief of the acute attack is best accomplished by the administration of vascoconstrictor substances in the form of ergotamine or dihydroergotamine. These are usually more effective or rectally, particularly if they are combined with caffeine. Addition of a sedative and an antispasmodic to the compound may enhance its effectiveness. Such compounds are currently available. Narcotics are mentioned only to condemn their use for they are not very effective in migraine and there is the ever present hazard of addiction. Ergot preparations are contraindicated in arterial peripheral vascular disease, hypertension, coronary, hepatic and renal diseases and pregnancy. Octin may be used with relief in some cases when it is not advisable to give ergot preparations. It should not be used in any patient who has organic heart disease, hypertension, or a hypertensive response to the drug.

The basic personality of the migraine patient is such that he is unlikely to be helped by any form of psychotherapy except prolonger analysis, however, the tension headaches which are often as troublesome as the true migraine may be mitigated by the measures outlined in the discussion above.

One of the most distressing types of headache which afflicts the human is that referred to as histaminic cephalalgia, Horton's syndrome or allergic headaches. Ninety per cent of the patients are men over 40 at the time of onset. The headache is unilateral, comes on and leaves suddenly, at times wakes the patient from a sound sleep and is associated with watering and congestion of the eye, rhinorrhea and sweating of the fact on the affected side. The pain is burning, boring, throbbing and excruciating. Pain is as severe as can be experienced and is coupled with such a sense of frustration and anxiety that patients at times consider suicide. It usually lasts 30 minutes to two hours and subsides as quickly as it began. No trigger zones are present nor is the pain confined to the pattern of any cranial nerve but it roughly involves the areas supplied by the branches of the external carotid artery. These headaches occur in crops, coming at widely varying intervals for several weeks and then subsiding as they came, without rhyme or reason, to recur months or years later.

Attacks at times may be precipitated by ingestion of alcohol, injection of histamine or use nitroglycerin. Use of ergotamine or breathing 100 per cent oxygen for a brief period may at times relieve the acute attack.

Prevention of attacks is difficult. Some investigators believe the best method is gentle desensitization to histamine[6]. This has not been found effective by others[8] who use an exclusion diet to eliminate food allergies, sensitivity to which is blamed for the attack. Because of the short duration of the headache, and unpredictability of its occurrence, the true worth of therapeutic measures is difficult to assess.

There are other types of headaches associated with specific situations, which will be mentioned in passing. Many women complain of a headache shortly before the beginning of the menstrual flow. Its cause is not known and it is best treated with mild sedatives and analgesics. Some women during the menopause have a vascular type headache which responds to ergot compounds and also to estrogenic substances. Occasionally one encounters an elderly patient who complains of a headache if he lies down and who obtains relief by propping up. This is thought possibly to be due to pulsations of elongated and tortuous arteriosclerotic cerebral vessels. Some headaches are the result of mechanical factors such as posture. Their cause and method of prevention is usually obvious if a careful history is taken. At times people who have had traumatic injury to the head may be plagued by severe headaches for a period of time, after apparent recovery. The mechanism of this is not clear. Treatment is symptomatic.

Diagnosis and treatment of headache is not an easy task. It requires patience and perseverance on the part of doctor and patient. If the problem is attacked in this manner some can be cured and almost all can be helped.

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Life Among the Flu Viruses: An Adventure in Preventive Medicine*

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During the past year an exciting chapter was added to the story of antibiosis between man and influenza viruses. This feud has been flaring up in irregular cycles for the past 600 years, and no one remembers before that just how or when it all started. In modern times it has often been fashionable to be so indisposed with the "Newe Acquayantance," the grippe, the flu, a new *virus* (Francis 1953a). Although the disease may at times be so mild as to be confused with the common cold or intestinal upset, it can kill with a fulminating hemorrhagic pneumonia. Ordinarily it appears as an epidemic of febrile illnesses with generalized aches and pains. The cases run a course of 3 to 5 days, with surprisingly few symptoms relating to the site of infection: the respiratory tract. Sporadic cases cannot be clinically differentiated from a score of other illnesses or prodromal stages of diseases encountered by physicians. In contrast, during an epidemic of influenza, clinical diagnoses are easily made. Laboratory tests should be relied upon only to confirm the first few cases and are most properly the business of local and state health officials. It is of greatest interest from the epidemiologist's point of view that these cases be identified. We shall return to this subject later.

TABLE 1
A SPECULATIVE HISTORY OF TYPE A SETS OF INFLUENZA VIRUSES

Years of Prevalence	19-11-22	1923-33	1934-43	1946-57	1957-?
Prototype Strain	Swine/15	WS	PR8	FM1	Jap./305

Our knowledge of the etiologic agents of influenza has come slowly. During the Golden Era of bacteriology, when almost every distress was believed to be associated with bacterial infections, *Hemophilus influenzae* was designated the cause of influenza. Following the 1918 experience, however, it became evident that this bacterium did not produce the disease. It wasn't until the early 1930's that results of a series of experiments by Shope, Smith, Andrewes and Laidow made it clear that viruses were responsible for swine and human epidemic influenza. Thus began the accumulation of intelligence by man about this enemy. Several years later it was learned that our foes were not one but many distinctly different types. Immunological defenses against one were completely useless under attack by other types. We have now encountered 4 such types, called, for the lack of better names, A, B, C and D (Jensen-1957a). Although many of us have had antigenic experience with C and D, the infections probably occurred in childhood and may have been mild or subclinical. Only A and B types are considered to be important epidemiologically. In 1947, it was learned that type A viruses could vary antigenic composition to such a degree that antibody formed during previous A infections might not be protective against the new form. Minor variations were also detected among the strains prevalent from year to year. Detailed antigenic analyses of these viruses and examinations of the antibody patterns developed in various age cohorts of our population led to the conclusion that 5 sets or families of type A strains have had periods of prevalence in sequence during the past several decades. As suggested in Table 1, the first in this modern era were similar to those recovered from swine in 1931. There is good sero-epidemiological evidence to believe close relatives of this group were circulating during the 1918 pandemic. Viruses from human infections which occurred during the years 1934 to 1943 were different from those isolated later. There is suggestive evidence that a different set was prevalent from 1922 until 1933. The group of strains sometimes labelled A-prime appeared in 1946 and stayed until 1957.

The swine influenza story is an interesting contrast. Prior to 1918-19, swine influenza was unknown, then during that terrible pandemic time for human populations, veterinary medicine records epizootics among the pigs. The viruses recovered from swine influenza during the years 1931-1957 are all antigenically similar (Jensen and Peterson, 1957). There has been no shifting from set to set as seen with the A viruses from human sources. The conclusion seems warranted that humans infected the swine populations during the pandemic with an unusual variant which is perpetuated now in pigs. After adaptation to the swine lungworm-earthworm cycle (Shope, 1936) the virus may be no longer pathogenic for man. The swine and human influenza host-virus relationships appear now to be completely independent. Examination of sera from several swine herds in various parts of the U. S. were carried out over the course of the Asian influenza period, and in no case was there evidence of swine infection. In fact, during October 1957 when Asian influenza was rampant in humans, viruses isolated from pigs were antigenically identical to the old 1931 strain. There seems no reason for the swine viruses to vary antigenically. With new generations of pigs every year the swine virus does not often meet immune hosts to select antigenic variants with such survival advantages. On the other hand, human influenza viruses which are slightly modified with respect to prominent antigens could be expected to circulate more readily in a partially immune host population.

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Control of human influenza by immunization is, therefore, complicated by the complexities of antigenic variations developing within the type A and B viruses. During the past 20 years, the results of many large-scale field trials conducted by the Commission on Influenza of the Armed Forces Epidemiological Board have established the efficacy of a killed virus vaccine in reducing influenza attack rates (Francis, 1953b). A large body of information has also accumulated during this time concerning many aspects of the epidemiology of the disease. There had been no major pandemic, however, during this period of effective research; the 1957 pandemic was the first since the development of virology as a science. Tools and concepts which were unknown at the time of the 1918-19 pandemic, have provided virologists and epidemiologists with unparalleled opportunities for studies of this unique phenomenon. During the summer of 1957 there was a sense of urgency in many minds, therefore, that full advantage be taken of all available techniques, knowledge and facilities in prompt and rational action.

When it became apparent that pandemic influenza could be expected on the basis of laboratory and epidemiologic intelligence, personal memories of the 1918 disaster burned brightly and for some people there were moments of panic. The world will not soon forget that series of epidemics which killed more people than the black plagues during the Middle Ages. Almost everyone who is at least 50 years old today can remember that influenza which attacked half the population of the world in a few months. Frequently they can recall a death in the family or in their circle of friends as the world death total mounted to more than 20 millions.

The A/Asian strains of influenza virus have produced a true pandemic since their first appearance in China in February, 1957. While mortality rates were strikingly affected, they did not approach those of 1918-19. Furthermore, there were significant differences in the age distribution of fatal cases for the two pandemics. During the most recent experience, the highest rates were among the oldest and youngest age segment of our population in a typical J-shaped curve. During the 1918 pandemic high rates were also seen among the young adults so that a skewed W-shape curve is descriptive. Epidemiologically, the 1957 pandemic resembled the pandemic of 1889-91 far more than 1918-19. The 1889 pandemic is recorded as originating in China and, curiously enough, serological studies suggest that the virus responsible for the disease of 1889 was rather closely related antigenically to the new strain. Mulder (1957) first noted that sera from people 70 years or older often contained antibody against the Asian strains. These sera were collected at least a year before the Asian influenza became prevalent. This observation has since been confirmed by many other investigators.

The precise point of origin of the new strain of type A influenza will probably never be determined. It is reasonably certain, however, that the first outbreaks occurred in the hinterland of China. The disease was first reported in the Kweichow province near Kweiyang at the end of February, and by the first week of March it had spread into Yunan province. By the middle of March, the new virus was prevalent all over China.

Early in April the disease appeared in Hong Kong in epidemic form. Soon new epidemics were reported in Twaiwan, Singapore and Borneo. Virus isolates obtained from these early epidemics and characterized in several laboratories (Jensen—1957b) alerted the world for the possibility of a new pandemic.

During May many additional countries of eastern Asia reported epidemic influenza which was confirmed by virus isolation. In some cases, it was possible to identify ships or aircraft, bearing passengers and crewmen with influenza, as the means responsible for the transmission of the disease to new countries. Opportunities for transmission, however, were innumerable, and no amount of quarantining could have prevented the spread. During the last of May a number of cases of confirmed Asian strain influenza were reported among travellers from the Far East recently arrived in the United States.

In June at least 24 countries of eastern and western Asia, Africa and Europe were affected for the first time with a distinct westward spread. During succeeding months the epidemic began to decline in countries first affected and elsewhere in the world there was a general upswing in incidence. South American countries were suffering in July and August. September was characterized by massive invasion of Europe and North America, but October was the peak month. By November, there was a general decline in almost all parts of the world. In the United States, it seemed all over by Christmas. During January and February, however, the weekly pneumonia and influenza death rates rose to a new peak just short of that obtained in October. There is at this time still no clear explanation for this second peak. School and industrial absentee rates were not greatly elevated during the latter period—although cases continued to appear and the virus was often isolated. The suggestion has been advanced that an unusually large number of aged patients became infected and died during this time. It is of interest that a similarly shaped biphasic curve also developed about the same time in England.

A very interesting pattern of spread through communities was apparent in the U. S. (Langmuir, et al, 1958). In general the first reports from new communities referred to children and usually the high school children were attacked first. A few days later elementary school absenteeism began to rise. First cases among adults and pre-school groups occurred soon thereafter, but the epidemic peaks were one or two weeks after those of the school children. Excess mortality was the last index of the epidemic to rise and fall. This lag is probably attributable to several factors among which could be: 1.) the duration of illness before death, and 2.) the time required for the disease to spread from the adult population to the infants and oldest members of the family, who are in general the individuals in any family with the smallest number of close daily contacts with individuals outside the family circle. At the same time they are most likely to develop a fatal complicating illness when attacked by influenza.

As previously mentioned, the excess mortality began to rise in the U. S. early in October, peaked the first part of November and declined to normal level during December. Thus the epidemic period lasted for about 10 weeks of intensive activity. During this period, the estimated number of influenza-associated deaths was in excess of 8,000. A similar number occurred during January through March. The 16,000 is only a small fraction of the number which occurred in 1918-19, but clearly demonstrates the importance of an epidemic communicable disease in the total public health program. During the fall period, the United States National Health Survey estimated that approximately 80 million persons became ill.

The immediate reaction to news of an approaching influenza epidemic with unknown virulence potential was to initiate steps necessary to provide immunity by vaccination. The rationale was very clear; there are no other effective means of control. Rapidly formed opinion concluded that vaccines should be produced as quickly as possible and used on a scale never before attempted; the incidence of antibody against this variant was practically nil in the general populations. The task was to obtain larger quantities than ever before so that 60 million doses might be available in a few months. A very dramatic race thus developed between production and use of this vaccine and the advent of widespread epidemics in this country.

The pharmaceutical companies licensed to produce vaccine in the U. S. began pilot studies late in May. To make a long story a little shorter, the virus just didn't grow as well as the old stock strains, and it was difficult to produce good potent vaccine in required volumes.

The potency of influenza vaccines in final analyses is determined by the efficiency in reduction of cases in vaccinated humans as compared to the number observed in strictly comparable groups of non-vaccinated persons. There must be other means of appraising antigenic potency of various preparations before use, however, and estimation of virus particle concentration appears to be an index of the quantity of viral antigenic mass. Here the capacity of influenza viruses to agglutinate erythrocytes is utilized to determine virus concentration because this function is not drastically impaired by inactivation procedures which destroy infectivity. Titers are expressed in terms of chicken cell agglutinating (CCA) units per cc.

The first lots of vaccine released for use contained only 200 CCA because manufacturers reported difficulty in producing more concentrated preparations. It was agreed that the 200 CCA level would be the minimal requirement until more potent materials could be produced, at which time the specifications would be raised to approach the 500 to 1,000 CCA vaccines which had been used successfully during past trials. During June and July the first experimental lots were made available for studies in human volunteers. Approximately 4 million doses (1.0 cc given subcutaneously) were produced and released for use in August, 9 million in September, 17 million in October and 8 million type A and a type B strain, and almost 5 million in November. Some manufacturers combined Asian strain vaccine with that produced with other doses of these polyvalent (several strains) vaccines were released during this time. By the end of September the manufacturers reported much greater yields could be obtained and a new potency level of 400 CCA for monovalent vaccines was set to become effective the first of December. During November over 9 million doses at the 400 CCA concentration were made available. In total, approximately 52 million cc. of vaccine were marketed during the four months of August through November.

The question that many of you may raise is, "Did the vaccine do any good?" In brief, the answer must be "Yes." There were at least 56 studies by 33 investigating groups initiated in the U. S. These were reported in a survey conducted by the Public Health Service Influenza Research Committee. Several large studies were carried out in the Armed Services and industries, as well as a number on a smaller scale at universities or conducted by the Public Health Service and state health departments. At least 100,000 persons of all age groups were represented in the studies. Special experiments concerned immunization of egg sensitive patients, pregnant women, infants, aged adults and persons with chronic pulmonary disease. Unfortunately, not all of the trials included adequate controls, but observations of lasting value were made in several experiments with superior design. In the main, the questions asked concerned optimal dose of vaccine and method of administration to produce effective reduction in number of cases of influenza or most efficient development of antibody. The complete review of all vaccination studies instigated this year is warranted and should be appearing in the near future. It suffices to say for the purposes of this paper that when the recommended dose of 1.0 cc. was given, the results of most studies indicated a vaccine efficiency in the order of 50 to 75 per cent reduction in cases (Davenport, 1958.)

There is little room for argument as to whether vaccines of this nature are of value. The question is, and has been for several years, how best to compound them. The challenging goal is in fact to improve on nature. In the past, immunologists have been guided by the principle of producing an immunity without disease which would be comparable to that resulting during natural convalescence. In this case, it is necessary to elicit a broader, more lasting immunity than that which obtains following recovery from influenza. It is important at this time to compile facts about the antigenic structure of influenza viruses with a logic that will lead us to a promised land of stout, high, immunological walls which are impervious to, and cannot be scaled by, troops of antigenic aliens.

Although the combat with influenza viruses is most dramatic other agents, many of which remain unidentified, ordinarily cause a far greater proportion of acute disease of the respiratory tract (Dingle and Feller, 1956). With the advent of the tissue culture systems, many new agents are being detected for the first time. In the foreground we are aware of that group called "adenoviruses" (Huebner, et al, 1957). It is well known that some of their number cause influenza-like illnesses, non-bacterial pharyngitis and mild transient diseases in childhood. Vaccines effective against this group of viruses are being developed rapidly (Hilleman, et al, 1958).

Other viruses have been obtained from coryzal illnesses and common cold-like cases (Morris, et al, 1956, Chanock, et al, 1957, Pelon, et al, 1956, and Price, 1956). At least 2 different viruses have been isolated from cases of croup in children (Chanock, 1956, and Phillipson, 1958). An entirely new group which is distantly related to influenza type D was recognized last fall by Chanock and his co-workers (1958) as often being responsible for respiratory disease in children. This extremely rapid progress portends an early end to the confusion which now reigns supreme as to the etiology of the common cold. Many laboratories are now engaged in this great effort to develop useful means for preventing some of the 3 colds a year which we now can expect. In the future respiratory tracts should be better equipped to repel the invaders.

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The Physician's Role in the Social Security Disability Program

Doctors, hospitals, institutions, and agencies who have contact with disabled people are frequently asked these days to fill out medical reports in connection with claims under the disability provisions of the social security law. Under these provisions, disabled workers 50 to 65 years of age, and the disabled dependent sons and daughters of retired or deceased workers, may receive monthly disability payments. Disabled workers under age 50 have their social security records "frozen". This protects the future benefit rights of the disabled worker and his family.

To qualify under these disability provisions, a person must be unable to engage in any substantial gainful activity by reason of a medically determinable physician or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration. A disabled worker must, in addition, have social security credits for work in at least 5 out of the 10 years before he became disabled, including a year and a half out of the 3 years before his disability began. A disabled child must be both unmarried and dependent, and must have become disabled before his or her eighteenth birthday.

Applications under the social security disability provisions are taken by the more than 570 social security district offices, located in communities all over the nation. The social security district office gives the disabled applicant information about his rights, helps him to fill out his application, and to get the proofs and documents he may need to support that application. Under the law, the disabled person is responsible for furnishing, at his own expense, the evidence to show that he is "disabled" within the meaning of the social security law.

His social security district office gives him one or more copies of a medical report form on which this evidence can be supplied. He is asked to take or mail this form to his attending physician or to a hospital, institution, public or private agency where he has been treated for his disabled condition. This report form, designed as a guide for the reporting physician, lists the kind of medical facts essential for the determination of "disability." However, the reporting doctor is not required to use it; if he prefers, he may make his report in the form of a narrative summary or he may submit photocopies of the pertinent medical records. The completed reports are to be returned by mail to the social security district office (or to a state agency, if indicated).

By providing a full and objective clinical picture of his patient, the reporting doctor fulfills his responsibility to his patient and, incidentally, expedites the decision. To be of maximum use for the evaluation of a patient's capacity for work, the report should include a history of the impairment, the symptomatology, clinical findings and diagnosis. Obviously, the reporting physician has an important role in the operation of the social security disability provisions. He is not, however, asked to decide the issue of "disability." The determination as to whether a patient is "disabled" must be made within the scope of the social security law; often it is based on evidence from more than one medical source. Also, the determination must take into account factors which are not purely medical —factors such as education, training and work experience.

In the state of Mississippi, the agreement with the federal government provides for the Division of Vocational Rehabilitation to make these disability determinations.

The evaluation of disability is made by a "review team" in the state agency. There are at least two professional people on each team. One of the two is a doctor of medicine (often a practicing physician who serves with the state agency on a part-time basis); the other is trained in evaluating the personal and vocational aspects of disability. The team must decide whether the applicant is sufficiently disabled to prevent him from engaging in any substantial gainful activity within the foreseeable future.

In many cases it is necessary to write back to the reporting physician because the medical report does not contain enough clinical facts. As a rule, the kinds of medical facts that the attending physician needs in making his diagnosis and in treating his patient are the same as those required to evaluate the severity of impairments in disability programs. However, certain medical facts are more highly significant in disability evaluation than to medical management of the case. To evaluate the effect of the impairment on the individual's ability to work requires the kind of medical evidence that confirms the diagnosis and measures remaining functional capacities of mind and body. By furnishing complete and objective evidence, the reporting physician makes it unnecessary for the reviewing physician to "write back" for additional clinical or laboratory data.

Where the medical evidence initially submitted indicates a reasonable likelihood that the applicant is disabled, but more precise clinical or laboratory findings are needed to arrive at a sound decision, or to resolve conflicts in the evidence, a consultative examination (usually at the specialist level) may be ordered to obtain additional information. Selection of consulting physicians and payment of fees are governed by state practices.

Some doctors feel that they should be reimbursed by the government for the cost of preparing the medical reports on their patients, and it is, of course, quite within their prerogative to charge the patient a fee for that service. However, under the law, the Social Security Administration cannot pay that fee; that is the individual's responsibility.

Other doctors are perturbed when asked to complete medical reports for individuals whom they may not have seen for years. In these cases, however, the physician is not expected to describe the present condition of the patient, but his medical condition as of the time he made his last examination. Although the social security disability provisions were made applicable to persons whose disabilities may have begun as far back as 1941, all those with long-standing disabilities must have applied before July 1, 1958.

Evaluation of Disability

The central purpose of disability evaluation is to determine remaining mental and physical capacities. To determine: 1) what the claimant has left, and 2) what he can do with what he has left.

A realistic evaluation of disability must be based on clinical and laboratory tests of the individual's ability to meet the metabolic demands of activity, to reason, to perceive, and to perform certain basic activities such as sitting, standing, bending and walking. When incapacity results from severe impairment of one or more such functions, it is essential to establish not only the fact that functional impairment exists, but also its extent.

A brief discussion of disability from heart disease may serve to illustrate the kind of evidence needed to measure the patient's remaining functional capacity, after appropriate therapy. Most frequently, impairments of the circulatory system produce loss of bodily function by reduction of cardiac reserve, or interference with peripheral vascular circulation. As a result the circulatory apparatus cannot meet effectively the metabolic demands placed upon it. The diagnosis of the condition usually reflects whether the impairment is caused by valvular disease, myocardial damage or vascular pathology.

Cardiac size by x-ray or physical and EKG findings furnish objective proof of cardiac pathology. The amount of dyspnea or angina described in terms of the number of steps that can be mounted or distance in feet or blocks that the patient can walk is highly significant to evaluation of the degree of loss of function. The presence or absence of cardiac edema and response to therapy are also indicative of severity of cardiovascular impairments. The status of the pulse in the peripheral vessels may provide gross clinical evidence of impaired circulation of the extremities.

Impairments of the cardiovascular system may manifest themselves with dramatic suddenness, e. g,. myocardial infarction, obstruction of vessels in peripheral or central nervous system circulation, lungs, and other visceral organs. The initial clinical manifestations are severe and the prognosis dubious. With survival from the acute stage, the appropriate therapy, substantial improvement can be expected over a period of time. A realistic evaluation of remaining function should be made after the convalescent period. Hence, the clinical and laboratory findings after maximum improvement from treatment are particularly valuable in making a determination of remaining cardiac, brain or other function. (Note that a "waiting period" is prescribed by law, i. e., the first monthly disability insurance benefit cannot be paid until the seventh month after the onset of the disability.) A description of the acute attack helps confirm the diagnosis and should therefore be included in the report.

Loss of function is evaluated on the basis of clinical and laboratory findings after maximum benefit from treatment. Clinical information concerning nature and response to treatment furnishes information on stability of functional capacity, i. e., a history of periodic decompensated heart disease, in spite of treatment, would indicate comparatively severe condition.

Conclusion

In developing evaluation guides for the use of state agencies and its own technical and professional personnel, the Social Security Administration has had the continuing cooperation of a medical advisory committee appointed by Commissioner Schottland, in February, 1955. The committee is composed of recognized specialists associated with medical and allied professions in various fields outside government, such as general practice, research, medical education, industry and labor.

The American Medical Association has cooperated with the Social Security Administration by informing its members about the medical aspects of the disability program, especially the preparation of medical reports. On June 1, 1957, the *Journal of the American Medical Association* carried a comprehensive report on the administration and organization of the disability provisions. Regulations on the meaning of disability appeared in the September 28, 1957, issue.

Medical Center Miscellany

Enrollment of the incoming 80-student freshman class in the School of Medicine brings the student body to over 270, according to Registrar Lallah M. White. Exact figures will be available at the end of the first trimester, she states.

Evidence of the new school's vigorous growth is a comparison with enrollment figures when the Medical Center opened three years ago this fall.

On September 6, 1955, 138 medical students began classes at the barely completed institution. The Medical Center had no student nurses or student technologists and the University hospital boasted only 14 interns and 12 residents.

In September, 1958, over 40 student nurses are enrolled in the School of Nursing; the Divisions of Medical Technology and X-Ray Technicians add another dozen students and interns and residents swell the long list of "learners" to over 400.

Classes in the School of Medicine began September 4. The first recess comes at Thanksgiving.

Lectures in Brussels

Dr. Arthur C. Guyton, professor of physiology and biophysics and chairman of the department, lectured by invitation at the World Congress of Cardiology in Brussels, Belgium, September 17.

One of four scientists presented in a symposium, Dr. Guyton spoke on "Venous Circulation." Other symposium participants were Dr. Von Euler of Stockholm, Sweden; Dr. C. Heymans of Ghent and Dr. Milton Mendlowitz of New York.

While in Europe, Dr. Guyton spoke on "Regulation of Venous Return and Cardiac Output" at a meeting of the Physiology Society of Lund, Sweden, September 10, and on "Mean Circulatory Pressure and Its Relation to Cardiac Output Control," at a Sandoz Pharmaceutical Company Seminar in Basel, Switzerland, September 17.

Dr. Guyton left the Medical Center in late August and will return in early October after having visited laboratories in 11 European cities.

Student Housing

Construction on four Medical Center apartment buildings to house medical students, interns, and residents is to begin this fall with tentative completion date set for autumn, 1959.

To provide 44 two-bedroom and 36 efficiency units, the buildings will be located near Lakeland Drive and North State Street. Cost of the $775,000 project will be amortized from rent revenues.

Although construction of these units will offer medical students some relief from high cost housing, it does not ease the student-nurse dormitory shortage, Dr. D. S. Pankratz, director of the Medical Center, points out. Student nurses still live in leased Lakeland Apartment units, he states.

Heart Grants

The cardiovascular research program has been bolstered by Mississippi and American Heart Association grants in the amount of $32,660 for the current year.

Effective July 1, the awards stress basic research and pilot projects and also renew a $4,000 cardiovascular fellowship.

Recipients are: Department of Medicine, Dr. Thomas M. Blake, Dr. Josef Smith, Dr. Raymond Grenfell; Surgery, Dr. Watts Webb, Dr. William A. Neely; Physiological Chemistry, Dr. M. Don Turner, Dr. L. L. Sulya; Physiology, Dr. Arthur Guyton, Dr. Jack Crowell.

Coming Events

Fall and early winter special events presently scheduled at the Medical Center include a Hospital Housekeeping Institute opening September 24, Pre-Med Day, October 16, and a one-day postgraduate program on cancer on December 4.

INTERPRETING MEDICAL LITERATURE

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CARDIOLOGY

The Influence of Anti-Coagulant Therapy on the Occurrence of Cardiac Rupture and Hemopericardium Following Heart Infarction

By: Sverre Aarseth, M.D. and Henrik F. Lange, M.D., Oslo, Norway, Medical Department 7, Ulleval Hospital, Oslo, Norway. (Page 250, *American Heart Journal*, Vol. 56, No. 2, August, 1958).

This study is divided into two parts. Among 1303 cases of fatal cardiac infarction, 89 cases of hemopericardium were found at autopsy. Eighty-one of these had myocardial rupture and three had rupture of the aorta. In the remaining five cases, localized cause could not be demonstrated. These five cases occurred among 33 cases receiving anti-coagulant therapy. In this group there were eight with excessive anti-coagulant effect shortly before death. Also, there were at least two patients who had excessive anti-coagulant effect at an earlier stage of treatment, and observation in this series indicated that anti-coagulant therapy increases the risk of hemopericardium with or without cardiac rupture, largely because of overdosage effect of anti-coagulants.

The second part of this control consisted of the study of 1110 cases of cardiac infarction with 1044 autopsies performed. All patients with inadequate anti-coagulant effect were excluded, leaving 69 patients receiving effective anti-coagulant therapy. These were compared with a group of 72 controlled patients of corresponding age and sex, and the findings indicated that the incidence of hemopericardium (one case) or myocardial rupture (14 cases) in the treated group was about twice as large as in the controlled group.

Comment: This, as well as previous studies, seems to indicate that anti-coagulant therapy may contribute to weakening of the affected area of the myocardium with hemopericardium and associated rupture. This is no argument against the routine use of anti-coagulant therapy in every case of acute myocardial infarction, as the few cases lost by hemopericardium or cardiac rupture will more than be offset by the gain achieved by the elimination of mural thrombi with subsequent arterial emboli. Actually, by anti-coagulant therapy we are preventing these earlier complications and allowing more patients to reach a stage at which cardiac rupture can occur. The fact that it occurs more frequently in the treated group means that more cases live longer on anti-coagulant therapy than formerly and they bespeak an argument in favor of the routine use of anti-coagulant therapy.

PEDIATRICS

Retrolental Fibroplasia: A Case Report on Preventable Blindness. W. H. Havener. Ohio M. J. 54: 496 (April) 1958 (Columbus).

The boy whose history is presented weighed 3 lbs. 15 ozs. (1,800 gm.) at birth, the estimated length of pregnancy being seven months. Oxygen was given for three days in unknown concentration. Although both eyes were normal shortly after birth, at the age of six months this child had markedly impaired vision. Reexamination at this time showed traction bands which displaced the large central retinal vessels. Fibrovascular membranes swept across the mascular area, obviously destroying central vision. Retrolental fibroplasia occurs almost exclusively in premature infants who have received supplemental oxygen. Central vision may be destroyed by fibrovascular membranes, as in this case, or the whole retina may become detached and pulled forward to produce the "retrolental" membrane. No therapy is known to be effective once the disease has manifested itself. It is extremely hazardous to use oxygen in the care of premature infants, except when obvious cyanosis or other evidence of anoxia exists.

Comment

This is not only an unusually interesting, but a most valuable abstract. A warning about the administration of oxygen to prematures is very important. Certainly, it should not be given in a greater volume than 40 per cent, not even then for a very long period of time. We all realize the importance of giving oxygen to resuscitation newborns, and the same thing applies more so to premature newborns, but there is no question of doubt about the liability of giving oxygen for a very long period of time, even to these children who are so gravely in need of oxygen to overcome their distress in breathing.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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KNOWING THE PATIENT

W. F. Bond, so well and so favorably known in Mississippi, has written a book entitled, *I Had a Friend*. Mr. Bond, a native of Mississippi, as teacher, state superintendent of education and as head of the state welfare program, has rendered great service across more than a half century. This book is full of wit and wisdom, information and inspiration. We were impressed by his account of how he apportioned his time to patrons of the school at one place. He decided he could render better service as a teacher to the pupils after he had spent a few days in their homes and knew them in all their relations to life. This intimate knowledge of the pupil became important to him as a teacher.

We believe the same kind of knowledge is more important to the doctor who is called upon to take care of the lives of both parents and children! When asked, Why don't you quit making house calls? we suggest that many people prefer a doctor to come to their homes in certain cases; doctoring is our business; and with the rapid flow to the hospitals, it is becoming impossible for every ill person to be hospitalized, even as fast as we are building hospitals in Mississippi. The very sick patient, medical and surgical, should not be crowded out of the hospital. The pendulum of medical service is swinging back to care at home. But we can treat a patient much better when he comes to the office and hospital if we know him in his relations to life in the home. We then know the patient as well as the germ causing the disease. And in the case of mental illness background knowledge is mandatory.

IN TRANSITU

In the beginning, our national government was set up in three divisions—legislative, executive, and judicial—each endowed with powers to check on the autonomy of the other. The wisdom of such partition of authority is apparent for the preservation of democratic function.

Our Mississippi State Medical Association has accepted many changes in organization. The recent revisions in the constitution and by-laws make the Board of Trustees practically autonomous. This may prove to be beneficial. It could prove to be a centralization of power that would do away with the healthy democratic precedent which has guided our state organization. Innovation in organization is necessary to meet the rapid march of medicine. But we don't want our Board of Trustees to settle in office for life, and become a supreme court *carte blanche*.

WITHIN SIX HOURS

Nine cases out of ten of acute appendicitis should be diagnosed within the first six hours of the onset. One out of ten may baffle the most astute diagnostician at times even after 24 hours. Constant pain, usually in the epigastrium in the beginning, nausea and vomiting, local tenderness in the right lower quadrant, fever, and leucocytosis are the classic symptoms. Constipation is usually present, poor appetite, and pain in the night waking the patient is also good evidence. The sixth important symptom is willingness on the part of the patient to be operated.

FOR MORE NURSES

It is of pressing importance that we have a dormitory for nurses at the University Medical Center in Jackson. We have three large hospitals in the state that have done a good job training nurses, one in Vicksburg and two in Jackson. But they can not meet the training demand. We need at least eight or ten nursing schools in the smaller hospitals over the state—these to be affiliated with the teaching hospital in Jackson. If nurses are graduated in their home locality, they will tend to remain in that area. An adequate distribution of schools will mean a better distribution of nurses.

SALAAM

The Mississippi Commission on Hospital Care has under way a building program for more hospital beds. We are receiving more federal funds this year and will also receive two million dollars from the state if sufficient revenue comes in.

For the increase in federal funds and for the extension of the Hill-Burton plan, we owe generous thanks to the efforts of Senator John Stennis.

Our state has a great hospital system in the making.

A DOG'S SCRATCH

"The dog scratched my child on the arm and made it bleed. What must I do?" "Carefully observe the dog for a week. A dog with rabies will surely die within a week's time or thereabout." Death of the dog is the best test we have for hydrophobia along with the clinical symptoms. The scratch from the dog is usually of little importance as long as the dog is all right.

SCHOLARSHIPS

Two Mississippi residents have been awarded two-year Wyeth Laboratories pediatric residency fellowships, Dr. John C. Gilliland, 1334 N. Jefferson Street, Jackson, Miss., and Dr. George T. Kimbrough, DeKalb Road, Louisville, Miss. Each will receive a grant of $4,800. Both physicians will take their residency studies at the University of Mississippi Medical Center in Jackson.

Dr. Gilliland attended Emory University and received his bachelor degree from Millsaps College. He was graduated from the University of Mississippi School of Medicine, and is interning at the school's Medical Center.

Dr. Kimbrough received his bachelor's degree from the University of Mississippi, and was graduated from the School of Medicine of Emory University. He is presently an intern at University Hospital and Hillman Clinic in Birmingham, Ala.

NEW ORLEANS GRADUATE ASSEMBLY

The twenty-second annual meeting of The New Orleans Graduate Medical Assembly will be held March 2-5, 1959, headquarters at the Roosevelt Hotel.

The following officers and members of the Executive Committee have been elected for this year: Dr. J. O. Weilbaecher, Jr., president; Dr. Ambrose H. Storck, president-elect; Dr. V. Medd Henington, first vice-president; Dr. W. E. Kittredge, second vice-president; Dr. Ralph M. Hartwell, third vice-president; Dr. M. E. St. Martin, secretary; Dr. Boni J. DeLaureal, treasurer; Dr. Robert F. Sharp, director of program; Dr. L. Sidney Charbonnet, Jr., assistant director of program; Dr. Mannie D. Paine, Jr., assistant director of program.

Members of the Executive Committee include Drs. Charles L. Brown (retiring president), Hugh T. Beacham, H. Theo Brierre, Max M. Hattaway and George H. Hauser.

NEW SMA HEADQUARTERS

On September 7 the home of the Southern Medical Association will be dedicated in Birmingham. This will be a great day for the Southern Medical, which has kept to the fore as one of the large medical organizations of the world. In the promotion of scientific medicine and medical fellowship it has stood at the very top.

The location of the home of the Southern Medical Association in Birmingham is fitting. A medical center for many years, it boasts a fine four-year medical school and has many outstanding medical men. Dr. Seale Harris epitomized the spirit of Southern medicine. Nor do Southern doctors forget the service rendered to this organization by Dr. and Mrs. M. Y. Dabney. Mr. C. P. Loranz is an important and integral part of the organization and has been across the years. He is still active and serving well.

AUA ESSAY AWARDS

The American Urological Association offers an annual award of $1000 (first prize of $500, second prize $300 and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Chalfonte-Haddon Hall, Atlantic City, New Jersey, April 20-23, 1959.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1958.

SSC ANNUAL AWARD

The Southeastern Surgical Congress announces its annual prize Scientific Paper Award for 1959. The best unpublished contribution on surgery or allied subjects will be awarded $100.00 and expenses for the author to attend its next annual meeting in Miami Beach, Florida. The second place winner will receive $50.00 cash and the third place winner will receive $25.00 cash.

Three copies of the paper should be sent before December 1, 1958, to the Councilor of the state in which the resident is living. The Councilor's name and address may be obtained by writing to the home office of the Southeastern Surgical Congress at 1032 Hurt Building, Atlanta 3, Ga.

The winner will present his paper before the Congress Assembly in Miami Beach, Florida, at the Deauville Hotel, March 9-12, 1959. The winner's expenses to the meeting will be borne by the Congress and a prize of $100.00 cash will be awarded at the annual banquet.

The Southeastern Surgical Congress reserves the right to submit the paper to the editorial board of its publication, *The American Surgeon*, for publication.

YES, PELLAGRA

There seems to be some doubt as to whether we are in a recession or a depression, either or both, but with two cases of pellagra coming into our hospital last week it would be well to stop and think. You will recall that Dr. Goldberger discovered the cause of this disease and its treatment and cure a few years ago over on our state farm at Parchman. It is a deficiency disease. Alcoholic pellagra plays quite a part now it seems.

ANNOUNCEMENTS

Clarence H. Webb, Jr., M.D., announces opening of offices at 4516 Meadow Ridge Drive, Jackson, Miss. Practice limited to anesthesiology.

FIFTY-YEAR BIOGRAPHICA

FELIX JOEL UNDERWOOD

Felix Joel Underwood, son of Marion Milton and Amanda Battle Underwood, was born in Nettleton, Mississippi, November 21, 1882.

Following graduation from the University of Tennessee, in 1908, he practiced medicine in Monroe County at Nettleton and Aberdeen and served as part-time health officer. Later, in 1918, he became Director of the Health Department. In 1921, he moved to Jackson to become Director of the Bureau of Child Hygiene of the Mississippi State Board of Health and on July 1, 1924, became State Health Officer and served in this position until July 1, 1958, when he retired.

For more than three decades, Doctor Underwood demonstrated how a health official can soundly build an expanding health service for the people. His philosophy of health was "keeping people well and not merely mending their bodies when broken." Doctor Underwood's excellent and long-sustained pattern of activity in public health administration produced a steady stream of accomplishments.

On May 15, 1958, Doctor Underwood was honored with membership in the Fifty Year Club in recognition of his many years of faithful service to his fellowman and to his state.

DEATHS

DR. FERN CHAMPENOIS

Dr. Fern Champenois, retired physician, died unexpectedly in Hattiesburg, June 14. He was 74.

Dr. Champenois specialized in eye, ear, nose and throat practice in Hattiesburg for almost 50 years before his retirement due to ill health.

A native of Shubuta, he moved to Hattiesburg with his family in 1898 and graduated from Hattiesburg High School. He then entered Tulane University, graduating from the school of medicine in 1905.

Dr. Champenois served in the Army during World War I. He was a charter member of the Hattiesburg Rotary Club, a member of the Elks Club, and was active in a number of professional organizations prior to his retirement.

Survivors include his widow; a son, Hal Champenois, of Augusta, Ga.; a daughter, Mrs. C. C. Germany of Centreville; and four grandchildren.

Fracture Problems

Leslie V. Rush, M.D.
Meridian, Miss.

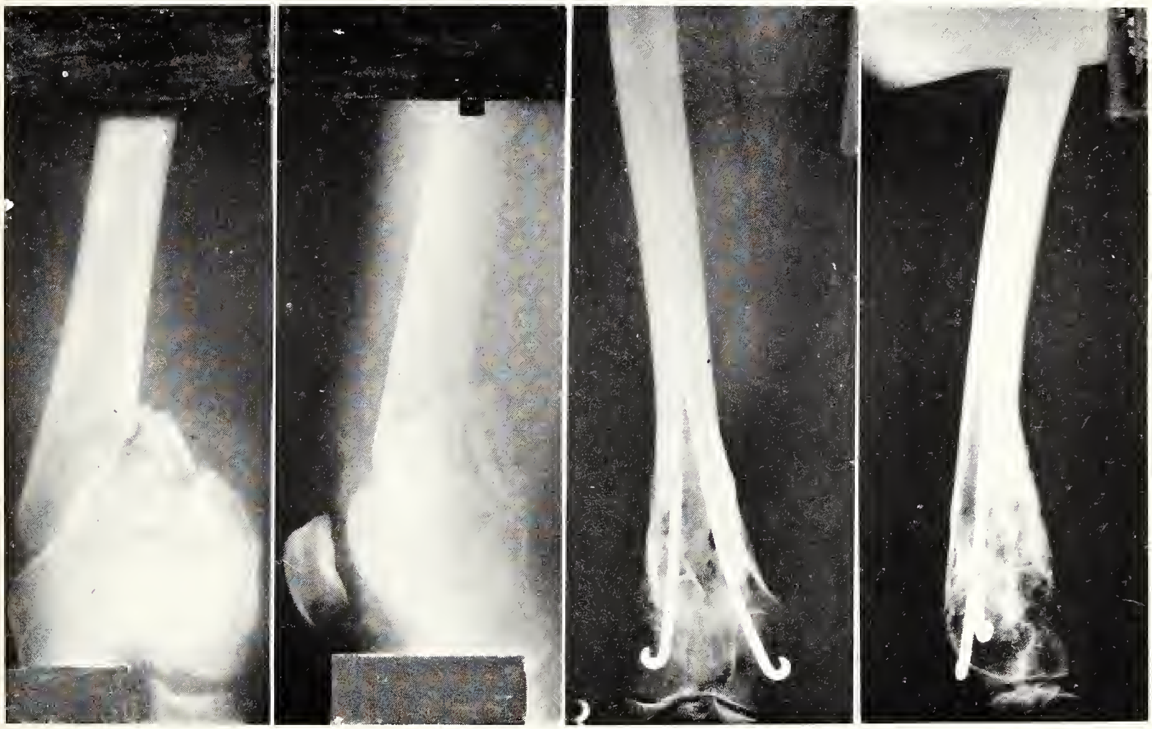
Problem No. 23 of a Series

COMMINUTED LOWER FEMUR: CLOSED PINNING

Open operation is rarely necessary for fractures of lower femur—even the most comminuted. Nor is the hip spica cast necessary.

Double pins can be applied as a closed procedure in most cases. Fixation is stable enough that lateral plaster splints suffice as external fixation.

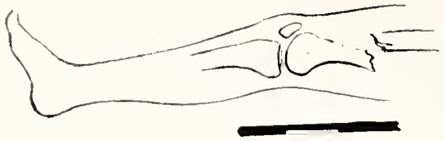
Motion can be started early and relatively good leg length can be maintained.

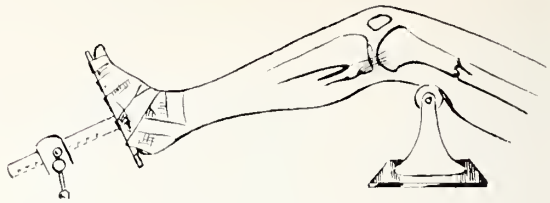


Female age 28: Comminuted supracondylar fracture of femur with vertical fracture into inter-condylar notch.

By the use of a specially designed countersupport, closed reduction was accomplished on fracture table. The use of this simple apparatus permitted the position to be maintained during closed pinning procedure under x-ray control throughout.

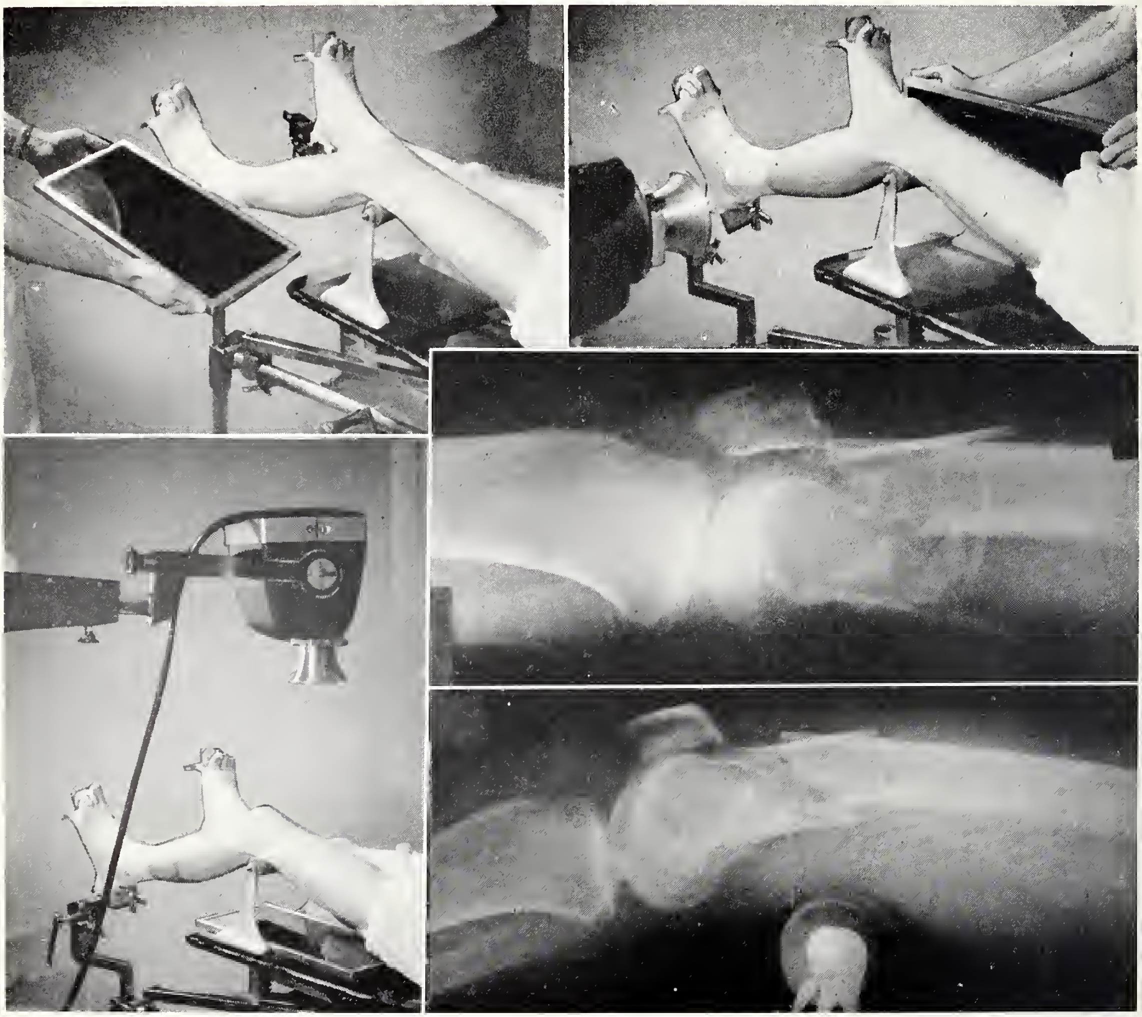
Ultimate result: Full function, one inch shortening.





CLOSED REDUCTION

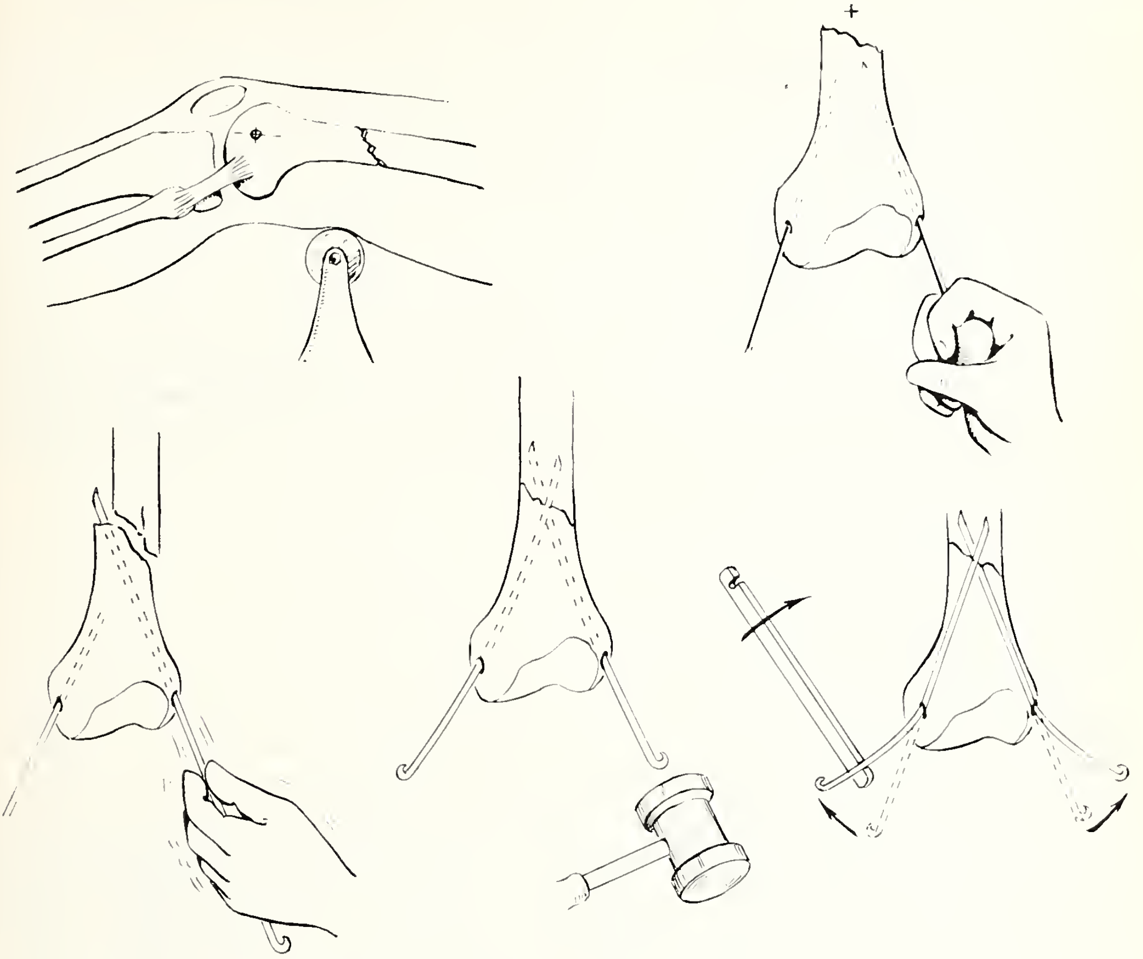
Patient on fracture table—hip adducted and neutral as to rotation. Countersupport placed beneath femoral condyles. Moderate traction exerted. Table top elevated until knee and hip flexed 35 degrees. Reduction usually accomplished.



X-RAY CONTROL

X-ray films can be made without disturbing reduction. Film cassette 7" x 17" is used. The hardwood roller offers little obstruction to AP view. There is no obstruction to radiograph in lateral view. Note outline of wood spool in accompanying pictures.

Countersupport covered by sterile drapes.



PINNING

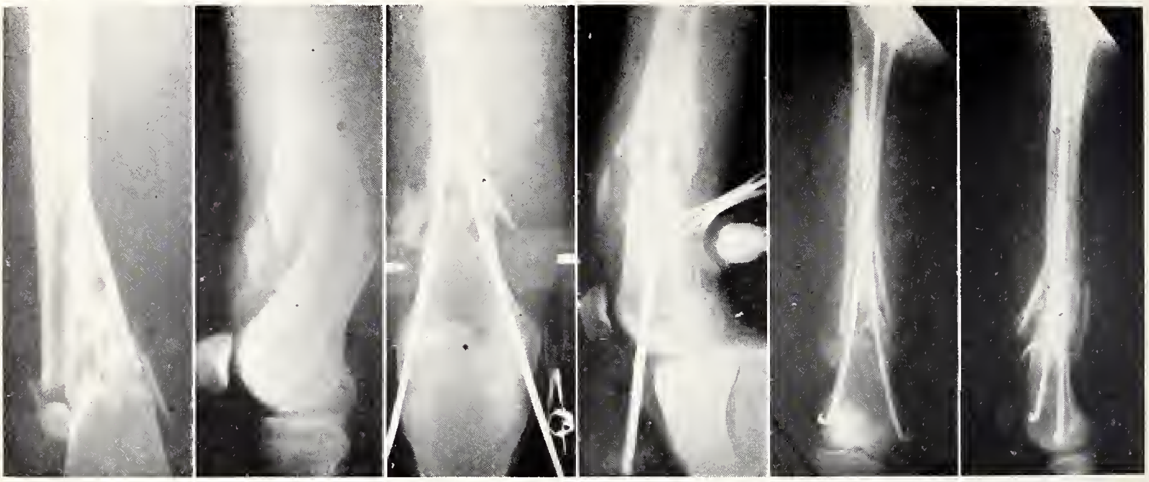
Aspirate blood from knee joint if necessary so articular margin of femur can be palpated.

Choose point on each side of condyle one inch from anterior and distal articular surfaces. Make one-inch incision over this point extending through capsule. (Avoid lateral ligaments.)

Use 3/16-inch awl reamer to make oblique opening in condyle. Aim for the center of the shaft five inches above joint space. Remember femur shaft is somewhat anterior.

When fracture of shaft fragment is oblique, introduce first the pin most likely to emerge through fracture space. Manipulate point of pin into medullary canal. This is usually not difficult and a distinct rough resistance is met to indicate canal is reached.

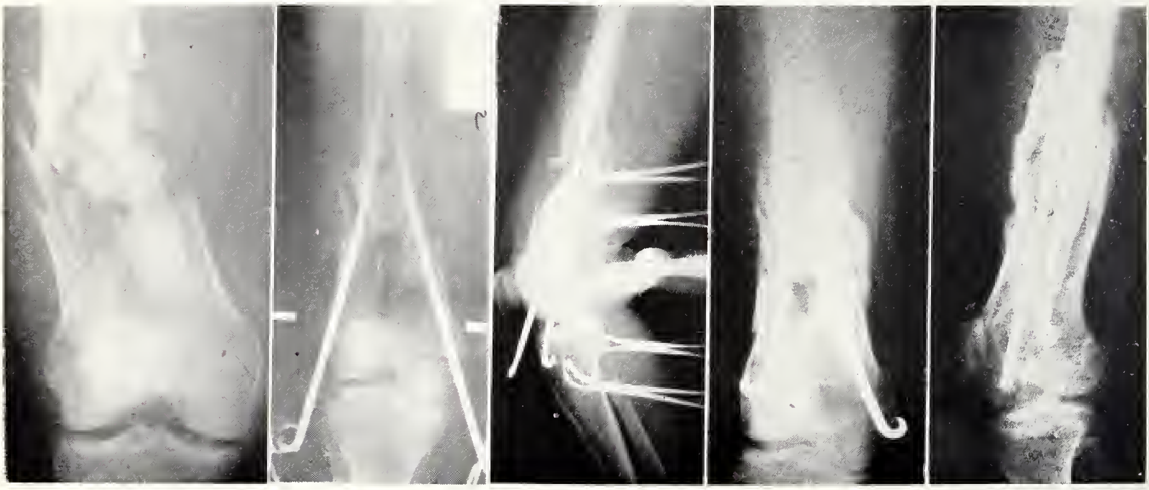
Repeat process with second, opposite pin. Drive both pins simultaneously. Stress-relieve heads to conform to wide condyle. Suture capsule over heads. Test knee motion before KES dressing applied.



FEMUR: COMMINUTED

JUNCTION MIDDLE AND LOWER THIRDS

Male age 83: Closed double pinning except for small incision for manipulating tip of one pin into medullary canal. Active motion begun at four weeks. Ultimate result: Full function, one inch shortening.



LOWER THIRD: CLOSED PINNING

Female age 61. Associated collateral ligament injury. Shortening one-fourth of an inch.

Recent Advances In Cataract Surgery*

ALSTON CALLAHAN, M.D., F.A.C.S.
Birmingham, Alabama

I

Location of Section

For the extraction of cataracts from eyes otherwise undiseased, the section is best placed through the limbal junction beneath a limbal-based conjunctival flap, since the translucent cornea itself is not directly cut, and few scleral vessels are disturbed. (Fig. 1A) The offset conjunctival incision reduces to a minimum the possibility of an epithelial downgrowth.

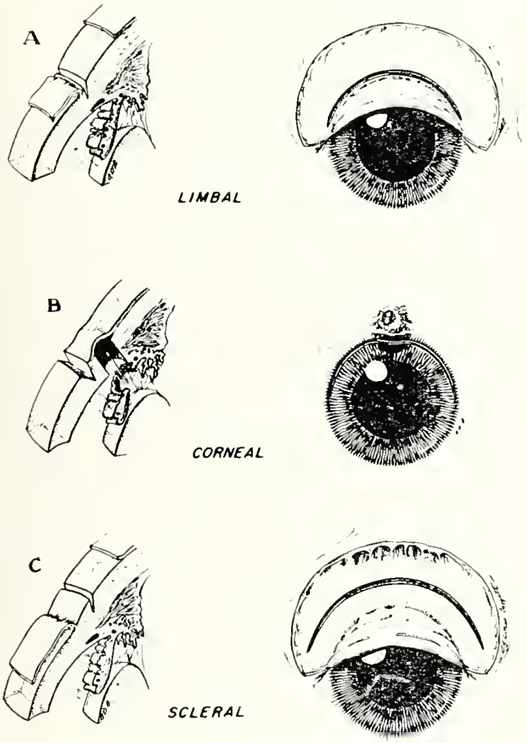


Figure 1. Location of sections for cataract.

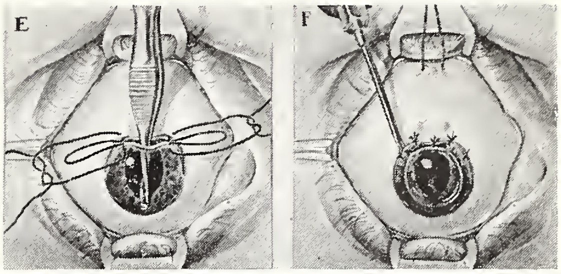


Figure 2. (E) After the corneal section has been made, and before the lens is removed, the Vannas scissors are used to cut the sphincter at its lowermost point. The pupillary aperture cannot then be closed off below the level of the upper lid margin, if the vitreous draws the iris up postoperatively.

(F) After the lens has been extracted, the sutures are tied, and an air bubble is inserted to separate the vitreous from the cornea.

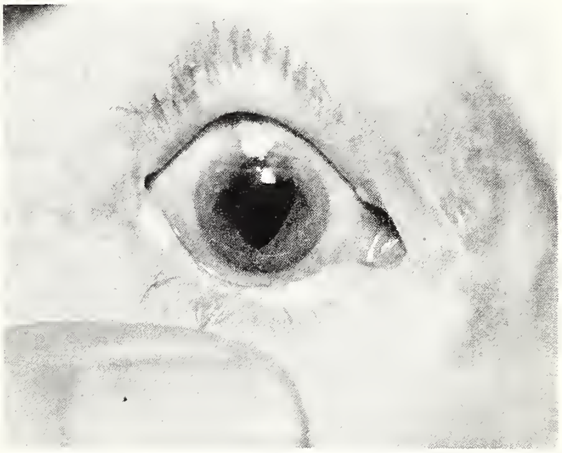


Figure 3. This is a photograph of the only eye of a 65-year-old female whose other eye was lost from (unrealized) chronic open angle glaucoma. An iridencleisis with incarceration of both pillars was performed by me in January 1951. The tension was controlled and no further field loss occurred. Slowly a cataract formed, maturing in 1957. In December 1957 it was removed through a corneal incision made 3 mm. within the limbus, and a sphinctorotomy was performed. This photograph was made in May 1958. The eye retained visual acuity of 20/20, a near-normal field, and no miotics are required.

When cataracts become mature in eyes with functioning filtering glaucoma operations, the sections are best placed through the cornea two or three millimeters below the bleb, thus avoiding the site of the previous operation, but utilizing the same limbal sector, so that the limbal and angle mechanisms of the lower half of the eye remain undisturbed. (Fig. 1B) Incisions in this corneal location are also indicated in eyes that are likely to bleed, as those with rubeosis of the iris root, or in patients with blood dyscrasias. After opening the eye, a sphincterotomy should be done before the lens is extracted (Fig. 2E). Vitreous could be lost if this step were delayed until after the lens is removed. After extraction, an air bubble should be inserted to keep the vitreous away from the cornea (Fig. 2F). The corneal section is then tightly closed with several accurately placed corneocorneal sutures. The result of such an operation is seen in Fig. 3.

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*Presented before the Eye, Ear, Nose and Throat Section of the Mississippi State Medical Association, Jackson, Miss., May, 1958.

With diseased or deteriorated corneal endothelium as develops in eyes with early corneal dystrophy, limbal or corneal incisions are frequently followed by serious excaberations of these abnormal conditions. In such eyes, the section for extraction should be made a few millimeters above the limbus because this location is least likely to interfere with corneal nutrition. (Fig. 1C) The section should be made in a shelving manner, starting well behind the limbus under a conjunctival flap and coming down on the uveal tissue just behind the iris root. Bleeding is more likely to occur with such sections, so that the cautery must sometimes be used. The end result in such an eye from which a cataract was removed through a scleral incision is shown in Fig. 4.

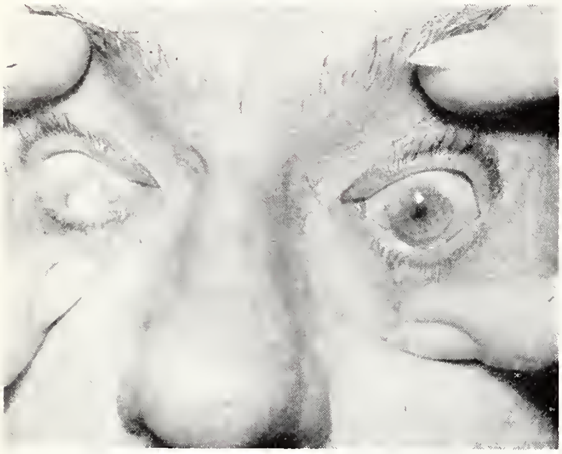

Figure 4. The cataract was removed from the right eye in another city, a limbal section being made. Severe dystrophy developed. A pterygium had been transplanted on the left eye, with scarring and irregularity of the cornea in the pupillary area. In 1952, the cataract was removed by me through a scleral section. Corneal dystrophy did not develop, and for the improvement of vision despite the corneal irregularity, a contact lens was prescribed. Patient wears this lens 8 hours a day, obtaining vision of 20/30.

McLean believes that a full iridectomy is indicated in these cases for the iris is more likely to prolapse. For uncontrolled primary glaucoma and mature senile cataracts, my results have been better with a combined operation than for separate operations. Damage to the endothelium must be avoided, and preferably the lens should be removed by grasping it near the upper equator with Verhoeff forceps, and sliding the lens out in its capsule.

II

Technic of Cataract Extraction (Fig. 5)

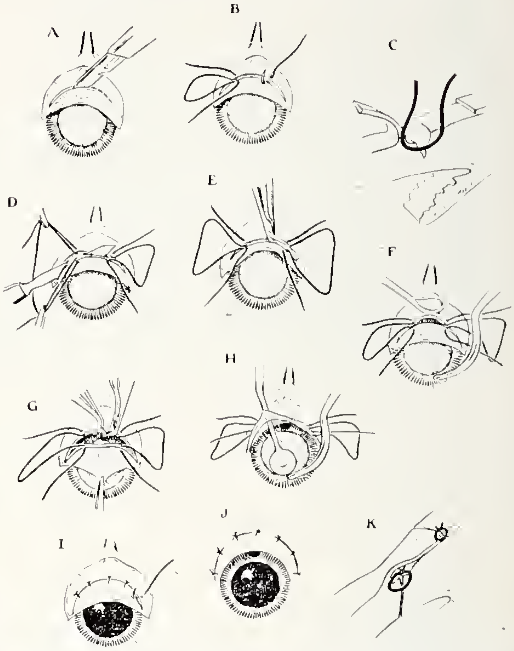

Figure 5. Technic of cataract extraction using five limbal sutures of chromic 6-0 gut.

A. A limbal based conjunctival flap, about 3 to 4 mm. in width, is reflected downward over the upper third of the cornea. With the limbus exposed, a groove is made along the upper corneal third in the corneoscleral junction with a Bard-Parker knife blade No. 15 for about one-half of the thickness of the sclera. Some episcleral bleeding may occur during this dissection. The oozing of blood should be sponged as often as necessary while the groove is being made and the sutures arranged, but the cautery should be used sparingly thus minimizing trauma to the eye.

B. The limbal appositional sutures of chromic gut 6-0 are being placed. One suture has been inserted through the sclera and then through the cornea to make its exit at the hinge at the corneoconjunctival flap. The suture has been drawn out of the groove and looped out of the way. The needle of the other suture is being pushed across the groove from sclera through cornea. The sutures are placed deeply enough in the tissues to hold from one-third to one-half of their thickness. These preplaced sutures predetermine the plane of the section and require the completion of the section to be most exacting.

C. A tridimensional section shows the course of an appositional suture. The needle is introduced through the sclera and then through the cornea beneath the conjunctival flap.

D. The position of the eye is fixed partly with the superior rectus suture, but a critical and important part of the fixation of the tissues to be cut is achieved by holding the suture loops at the lateral extent of the incision. With forceps, the surgeon holds one loop, the assistant the other and the cataract knife is then inserted through the groove into the anterior chamber in front of the iris, across a short sector of the anterior chamber to make a counter puncture, following the slot and not tilting the blade. If preferred, a counter puncture may not be made and the handle of the knife can be turned upward to cut a section long enough for the introduction of one of the scissors blades. We make the Von Graefe knife incision for only five or six mm., so as to avoid cutting the sutures, prematurely performing an iridotomy, or cutting too deeply into the sclera. Also, we do not have to fold the conjunctival flap back and forth as the section is made with the knife.

E. Paired scissors should be used to extend the section, for with them it is possible for the posterior blade to be placed inside of the anterior chamber against the iris so that neither a shelving nor a crushing section will be made. We prefer the Castroviejo scissors for this.

F. Unless the vitreous is fluid, counteracting the use of external pressure, the Haik maneuver is used to first break some of the zonular fibers. This maneuver is begun by placing a lens loop on the sclera lip at the 12:00 position, tilting down the upper equator, and tilting up the lower, with an expressor such as the Budapest, point pressure is made with a sliding movement just within the corneal margin at 6:00. After pressure has been exerted to break some of the zonules, the lens loop is moved to the 1:00 position, the expressor to the 7:00 position, and the same type of pressure applied. Finally the lens loop is moved to the 11:00 position, the expressor's tip is placed at the 5:00 position, and more of the zonular fibers are ruptured. These maneuvers are made carefully because the vitreous may come into the anterior chamber; should this occur, the external pressure should be stopped immediately.

In many instances, the inferior fibers will be ruptured and the lower edge of the lens can be seen to prolapse forward at the end of this manipulation. It is possible to tell from this side whether the lens is nearly loose or whether it remains rigidly fixed by the fibers. If further rupture of the fibers should be performed before applying forceps or an erisophake to the anterior surface of the lens, the zonules on the anterior surface of the lens can be stripped away with a top of a muscle hook.

G. The iris is gently lifted with forceps and the Barraquer scissors are used to cut an iridotomy midway between the base and the free edge of the iris. The iridotomy should not be performed directly at the base of the iris for there is always a possibility of synechiae forming at the angle and negating the effect of the iridotomy. The anterior chamber is irrigated with sterile saline solution to remove loose pigment cells and blood.

H. The erisophake, filled with sterile saline solution, is introduced into the anterior chamber through the lateral part of the section or from above, and after the cup is passed through the pupil, the stem is rotated into the lateral angle of the section. If the iris has resisted dilation, gentle pressure on the bulb will cause the solution to wash the iris forward from the lens, making it possible for the cup to be inserted through the pupillary opening and placed in contact with the anterior lens capsule a little below the center of the lens. Pressure on the bulb is relaxed thus creating the suction. The cup may be partly hidden by the iris, even in eyes in which there is adequate dilation.

The erisiphake is then rotated so that the suction cup is elevated toward the posterior surface of the cornea and is pulled slightly upward, and this puts the lower fibers on a stretch. With the lens expressor, counter-pressure is placed on the zonular fibers through the cornea at the 6:00 limbus, then at 4:00, and then at 8:00, and then at 6:00 again. The angle of the erisophake is changed slightly with each shift of the expressor so a localized area of zonular fibers can be greatly tensed.

A slight forward motion of the lens can be seen when the fibers rupture. The iris at this point should slide off the cup. The cup of the erisophake is then rotated upward and forward. Counter-pressure is continued, tucking the cornea below the lens as it comes upward without applying pressure upon the vitreous face. The erisophake cup should always be kept parallel with the anterior surface of the lens. If the cup is twisted, tilted, or slid along the anterior capsule it will lose its grip.

If the erisophake slips off the lens before the zonular fibers are ruptured, an erisophake with a larger cup (New York Eye and Ear Model) can be used to grasp the capsule the second time. If the separation occurs after the peeling from the zonular fibers has been completed or nearly completed, delivery is made with capsule forceps grasping the capsule at or near the equator.

After the inferior equator has turned forward in the pupillary area, the direction of pull with the erisophake is primarily up. If the zonular fibers continue their resistance, the lens may be rocked from side to side and counter-pressure either continued through the cornea to the undersurface of the lens or to the side of the lens opposite to the direction of pull.

The fold of cornea is advanced upward behind the equator of the lens to lift it. Remembering the consequences that can come from vitreous adherence to the endothelium, the vitreous is not disturbed: but if it threatens to escape we do not attempt to trap it forcibly in the eye by grasping the cornea and pulling it quickly into place.

I. The appositional sutures are tied, and then three additional sutures are inserted and tied. With the ultra-sharp needles, these may be placed easily without dislodging the vitreous. The anterior chamber is refilled with an air bubble or sterile saline solution.

J. A conjunctival incision may be reunited with interrupted 6-0 chromic sutures, or a continuous suture of this material may be used.

K. The tridimensional view shows that the limbal sutures uniting the section are buried beneath the conjunctival.

III

Postoperative Management

Patients who live within 10 or fifteen miles are required to stay in the hospital for seven days after cataract surgery; if they live at greater distances they remain another day or two. They are allowed to sit up in bed on the day following the surgery, and are allowed to go to the bathroom on the third or fourth day after surgery.

Absorbable sutures relieve many anxious patients from worrying about the pain and discomfort that may accompany the removal of the sutures.

Correcting spectacle lenses are orderel as early as two weeks after surgery, if the vision of the other eye is poor. In most cities a rental service for the temporary lenses is available and the time of ordering the lens usually depends more on the vision of the fellow eye than it does upon the operated eye.

Urethral Diverticulum In the Female*

A CASE REPORT:

JOHN S. BARR, M.D.
Belzoni, Mississippi

Urethral diverticulum is a rare disease of women, but the diagnosis will be made and proper surgical treatment instituted more often, if the existence of such an entity is borne in mind. The majority of the reports upon this condition have appeared in the last ten years, indicating an increased awareness among clinicians that such a disease occurs and is amenable to therapy. The records of Johns Hopkins Hospital, studied by Wharton[1], revealed only thirty cases, from 1890 to 1949. The true incidence of this disease is difficult to determine, but more cases will probably be seen by gynecologists and general surgeons than by urologists, and the family physician will not miss the diagnosis if he knows such a disease occurs.

DESCRIPTION

A diverticulum of the female urethra is a cavity or pouch in the urethro-vaginal septum, communicating with the urethra. It varies in size from three (3) mms. to eight (8) cms. in diameter. It may be confined to a small para-urethral area or it may extend along the entire length of the urethra. Its cavity is lined with epithelium and invariably contains purulent urine and often gross blood. Its wall is composed of two principal layers, urethral mucous membrane and vaginal mucosa.

ETIOLOGY

Many causes for these diverticuli have been suggested, but all are difficult of proof. TeLinde[2] thinks that it is probable that the majority begin as Neisserian urethral infections which break through into the sub-urethral tissue and form an abscess cavity which ultimately becomes lined with epithelium. They are said to follow childbirth, though cases in nulliparous females have been reported[2].

Paramenter[3] suggested various etiologies including trauma from childbirth, infection of urethral glands with sealing off of communication with the urethra and subsequent re-establishment of communication, instrumentation of the urethra, urethral stone, urethral stricture, besides several possible congenital causes. These are an origin from Gartner's duct, faulty union of prima folds, cell nests, Wolffian duct and vaginal cysts that have ruptured into the urethra. Stevens believes the rupture of a suburethral abscess or cyst into the urethra is the commonest cause; with this I am inclined to agree.

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*Read before the 69th semi-annual meeting of the Delta Medical Society, April 9, 1958, Belzoni, Miss.

DIAGNOSIS

The patient's complaints are variable. Dysuria is probably the commonest, with increased frequency and urgency of urination. Urethral discharge, hematuria and difficulty in emptying the bladder are less common complaints. Awareness of a vaginal tumor and pain upon walking or during coitus are often mentioned.

Upon vaginal examination a sub-urethral mass is seen. In the larger diverticuli, this may be immediately obvious, but in the smaller ones, very careful stripping of the urethra may be necessary. Pressure upon the mass will usually produce a spurt of sanguino-purulent material diluted with urine. A specimen from the bladder obtained by catheter will show numerous white blood cells. This is due to concomitant urethritis and trigonitis.

Differentially, one must rule out a small cystocele, a urethrocele and sub-urethral cyst. An abscess in this area is very rare. A diverticulum is to be thought of in the case of the lady that repeatedly "sends in" a urine specimen and requests a prescription for the relief of the pus found therein. If she doesn't get well soon insist upon pelvic examination.

The diagnostic clincher is cystoscopy. In this, one is able to visualize the defect in the urethral wall into the diverticulum. A radioplaque medium may be introduced, through a urethral catheter, into the diverticulum, and x-ray demonstration done. This, however, is really a redundant procedure.

TREATMENT

This is surgical; if the diagnosis is suspected, cystoscopy may be followed by operative intervention at the same sitting.

With the patient in the lithotomy position, the labia sutured to the femoral crura, and a sound in the urethra, a vertical incision is made through the vaginal mucosa and epithelial lining of the diverticulum. The urethral defect is demonstrated by elevating the urethral sound toward the symphysis pubis. The epithelial lining is separated from the vaginal mucosa with surprising ease. This is carried down on all sides to the urethral defect. The lining is excised leaving a small cuff of tissue at the defect. This is closed with interrupted flat mattress sutures of fine chromic catgut. The excessive vaginal mucosa is then excised and the edges sutured with interrupted fine chromic catgut.

Whether or not an indwelling catheter is inserted is controversial. A previously done antibiotic sensitivity test is useful in establishing appropriate antibiotic therapy postoperatively. Complete healing may be expected within four to six weeks.

CASE REPORT

A 47-year-old colored female presented herself with a chief complaint of painful urination. There was also increased frequency of urination; the patient had noticed a mass in the vaginal introitus. Systems review revealed dyspnoea upon exertion, but the patient controlled this by abstaining from exertion. She was gravida 3, para 3; there was no remembrance of a gonococcal infection. She was post menopausal.

The patient first noticed the stranguria about one year prior to admission. The mass was noticed about six months prior to admission.

Physical examination disclosed a short, very obese, hypertensive negro female, well endowed in the mammary and gluteal areas. Pelvic examination showed the presence of a soft glabrous mass, 5 cms. in diameter, in the vaginal introitus, just beneath the urethral meatus. It felt cystic and was not freely movable. The urine specimen was loaded with pus and blood.

Cystoscopy was done after admission to the hospital. The trigone was inflamed, as was the urethra. The defect in the urethra was clearly visualized about 15 mms. from the meatus. It was ovoid and about 4 by 6 mms. When pressure was applied upon the vaginal mass, a jet of sanguino-purulent material could be seen in the urethral defect.

After several days of antibiotic therapy, the diverticulum was surgically removed in the previously described manner. An indwelling catheter was left *in situ* for three days; after its removal the patient experienced no difficulty in voiding.

Healing was complete at the end of four weeks. There has been no indication of recurrence.

SUMMARY

I. Urethral diverticulum in the female is a rather rare entity, but will be recognized if its existence is borne in mind.

II. The diagnosis must usually be confirmed by cystoscopic and urethroscopic examination.

III. A case with a successful outcome is presented.

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Medicine's Challenge — An Aging Population*

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There are today 15 million Americans over 65 years of age. By 1975, there will be 23 million. The *increase* alone is equal to the combined population of the states of Alabama, Mississippi, and Louisiana. The 20-year increase in life-expectancy since 1900 has produced a "boom" in this segment of the population equal in significance to the "baby boom" that has received so much attention.

A child born today can be expected to live to the age of 70.5 years. Of more immediate interest and concern, however, is the fact that a 60-year-old person today has 17.5 more years of life expectancy—he will probably live to be 77! And during these latter years of life, he will be beset by many complex problems that have only recently been given serious consideration by society and the medical profession.

When there were relatively few people in the category we label "aged," their problems made little impression on others. Recently by the very force of their numbers, they have created a degree of interest previously unknown. At first glance, this interest might appear to represent a basic change in the attitude of younger people toward their elders. I can find no evidence that this is true. To the contrary, Linden's[1] observation may well be the prevailing sentiment even today. He said: "Progress in science is interpreted as a harnessing of nature. As long as an individual supports his fight against many of the forces of nature, he is permitted to keep his membership in the society of masters of nature. But the older person is seen as one who has lost his fight with nature . . . By social standards, he is a weakling and an outlander, unworthy of intensive consideration or high valuation."

It would appear that the basic, underlying problem in meeting the needs of the aged is one of improving their *status in society*. There are four facets that must be considered here—social, economic, political and medical. All are interdependent, and each must be regarded as a portion of the total problem rather than a separate entity.

How real this interdependence is is shown by Havinghurst[2]. He lists several factors as determining a person's ability or inability to function socially above the level of his physical equipment. He *can* do so, if :

1) he possesses skills and habits that persist after the ability to learn new skills and knowledge decreases;
2) he lives in a society that offers status and prestige to older people; and
3) he remains free of the infirmities that reduce his power to function socially (e.g. physical or mental deterioration, domestic difficulties, financial dependence).

On the other hand, he *cannot*, if:

1) his occupation requires physical vigor;
2) he lives in a youth-oriented society that shows no respect but lip-service to the elderly (e.g. early, forced retirement); and
3) his functioning efficiency is reduced by such infirmities as poor health, financial or family difficulties, etc.

With the rapid increase in the number of aged persons paralleling the accelerated pace of urbanization and industrialization in our society, it was inevitable that many of these old people developed social "disability." The close relationship of the medical, economic and political factors with the over-all social problem is apparent. Also apparent is the interest now being shown by at least two groups in attempting to solve this problem. These groups are the medical profession and the political leaders.

Mr. Rowland Kennedy, executive secretary of the Mississippi State Medical Association, draws the issue into sharp focus in his March 1958 "Newsletter": "Top nomination for the most dynamic—and probably least understood—problem in the medico-legal arena today is medical care for America's aged . . . both sides of the fence, enlightened free enterprise leaders and the social welfare planners, realize that the care-for-the-aging problem is urgent. A substantial segment of senior citizens has low or no income, no health insurance plan, are not productively employed, but nearly all vote."

It boils down to this: Efforts to solve the many-faceted problems of an aging population will increase. Furthermore, these efforts will be directed at the two areas so clearly implied in Havinghurst's analysis. One area might be labelled "a place in society," meaning that more social and economic opportunities will be made available to the aged. We can assume that this will occur—the political facts of life do not permit any other inference. It can be said without cynicism that twenty-three million is a lot of voters.

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The other area is "medical care." This refers to a continuing need to foster scientific progress in preventing and treating the illnesses of the elderly; but primarily, it involves the necessity of making medical care available at reasonable cost. It is this latter aspect of the medical area particularly that contains political and socio-economic connotations as well as scientific. For this reason, our profession must offer some answers to the questions that 23 million people will be asking. It is no longer a question of whether good medical care is a right or privilege; it is simply a matter of how to provide it. If we don't find an answer, others surely will—and it may not be to our liking.

Attempts to meet the health needs of older people are increasing as the number of aged persons grows larger. As yet unanswered are the questions, "how?" and "by whom?" Physicians are properly concerned with developing and utilizing new ways of combatting disease, and in this field they are doing well. But is it not just as important for us to assume the leadership in seeking ways of insuring that the products of science are readily available to the people who need them?

Let us assume that the status of the aged in society is determined by the several factors already mentioned. Let us assume also that such problems as disregard of the elderly—as manifested by the cluttering of nursing homes and mental institutions with unwanted parents—is one that all citizens must face. But let us focus our attention for the moment on what we can do *as physicians* to meet the challenge of an aging population.

Scientific research is one weapon that medicine has already begun to use extensively and effectively. In the field of cardiovascular disease—killer of one million Americans a year—much has been accomplished in the last ten years. Anticoagulants, hypotensive agents, surgery of the heart and blood vessels—these are but the more dramatic of the countless new methods of prolonging life and making life more comfortable.

Recently, the new diuretic and hypotensive-potentiating drug, chlorothiazide, has offered new hope and greater comfort to people suffering from cardiovascular and renal diseases. The painful death of carcinoma and the living death of senility are under attack from the meprobamate and promazine drugs.

Research is providing many answers, but research is not the *whole* answer. As a weapon against disease, it is like a long-range gun without an aiming mechanism: It is *usable*, but alone and unaided it is *not useful*. It needs to be given a sense of direction before it can hit a target.

As practicing physicians—whether we are in private practice, teaching or public health—we can use the products of research as they become known to us. We can use them, that is, to benefit those people who are in a position, physically, mentally and financially, to take advantage of them. Actually there are many people who *can* be helped but who are *not* receiving optimum benefit from advances already made. Of the several factors responsible for this, three stand out; and I will limit my remarks to them.

One of the most pressing needs in the care of elderly patients is adequate physical facilities. General hospital rooms are prohibitively expensive for patients with chronic illness—and as the old folks are told so frequently, the beds are needed by someone younger and more acutely ill. Existing facilities for nursing-home and convalescent care are of such diverse quality that little confidence is placed in a great majority of them. They exist under state licensure laws that are, in many cases, too lax to be helpful, and they are not subject to inspection by a voluntary accrediting agency, such as the Joint Commission on Accreditation of Hospitals.

Dr. Kenneth Babcock[3], director of the Joint Commission, said recently that if voluntary agencies do not establish a system for evaluating nursing homes soon, "the government is going to have to." Doctor Babcock is probably right: The government, like nature, abhors a vacuum.

Convalescent wings of general hospitals and more properly-supervised nursing homes are considered by many to be the answer to this problem. These facilities would have the advantage of offering medical supervision without the extremely high overhead costs of regular hospital beds. In some cases, existing physical plants could be used, provided the quality of nursing care met certain standards. But in general, a major building program would be necessary to supply the anticipated demand.

Assuming that this approach is the correct one—and it certainly is better than none at all—who is going to build these facilities? Even that question is premature until we can answer this one—is anyone interested enough to beat the drums to get these projects underway? As physicians, we see the need. Perhaps we had better start thinking about it—and coming up with some ideas.

The second pressing need in a health program for the aged is a means of meeting the costs of medical care. According to Mr. Marion Folsom[1], Secretary of Health, Education and Welfare, "about half of the people aged 65 or over . . . have *no* insurance against medical care costs." Yet McLaughlin[5] has shown that people over 65, while constituting only 8% of the total population, account for 40% of the total number who suffer incapacitating physical illnesses of more than 3 months' duration. The economic implications of this fact are tremendous. It is generally recognized, at long last, that this situation must somehow be improved. Recognition of this urgent need has begun to spawn a number of plans for meeting it.

President Eisenhower's unsuccessful attempt to have the federal government develop co-insurance agreements with private insurance companies may be renewed. H.R. 9467, known as the Forand Bill, would have the federal government foot the hospital and surgical bills for about 13 million persons eligible for Social Security benefits. Most of the recipients would be people over 65 years of age. While the co-insurance proposal differs in many respects from the Forand Bill, both plans would be financed by the only source the government has—the taxpayer.

Those who take a dim view of such schemes should be interested in a new type of voluntary hospital and medical-care insurance that is based on the concept of providing adequate coverage at a realistic price. It is called "comprehensive" insurance.

Dr. Elmer Hess[6], former president of the American Medical Association, advocates development of this type coverage for everyone. It appears to be eminently suited to the needs of old people, in particular. It is a plan "which,

1) after the individual pays a small initial deductible amount,
2) provides reimbursement of a substantial portion (75% or more) of expense incurred for virtually the entire range of medical expenses,
3) in or out of a hospital,
4) up to high over-all maximum amounts
5) without arbitrary fee schedules or other 'inside limits' and
6) permits complete freedom in selection of physician, hospital or other source of medical care."

This plan differs in several particulars from conventional coverage, such as that provided in the Blue plans, and from so-called catastrophic coverage with deductible amounts of $300.00 or more. In comprehensive plans the deductible amount is no higher than $50.00 and the co-insurance feature starts after the first few hundred dollars. Benefit ceilings are high, up to $7,500.00 per year, and exclusions are few.

Recently the American Medical Association joined the American Dental Association, American Hospital Association and the American Nursing Home Association to form the Joint Council to Improve the Health Care of the Aged. The Council has already announced plans for a far-reaching program of fact-finding to determine what might be done to tackle the problems of health care for the aged. Constructive action such as this may well lead to the solution of the problems of better facilities and better health insurance coverage.

The third factor that plays a major part in preventing many elderly people from obtaining optimum health is forced retirement at age 65. Many are ready to retire at 65, it is true; and some must cease their usual activity sooner. On the other hand, a great many people are as vigorous physically and alert mentally at 70 as others are at 55 or 60. The great diversity of individual talent, skill and aptitude, as well as the different rate at which the aging process causes degenerative changes in different people, makes any fixed retirement age an arbitrary one.

A boxer is old at 35, a baseball player is creaking at 40, and a longshoreman must slow down at about 50. But the average worker whose usefulness depends as much on his knowledge and experience as on his physical stamina, may still be productive long after he reaches 65. It is evident, therefore, that some basis other than chronological age is needed to determine a person's fitness for work.

It is in this regard that physicians can and should take the lead in developing physical and mental standards that can be applied to a variety of occupations. These criteria could be used either to assess how well a particular person compares to an established norm or, better yet, what degree of fitness is needed for a particular kind of work. While conceding that no absolutely infallible method can be found in applying general rules to specific cases, it would seem as if any reasonable plan would be superior to the wasteful and unfair system that now exists.

As a nation, we cannot afford the luxury of forcing 23 million people out of the productive life of the economy. And as physicians, we cannot hope to attain the best results of our therapeutic efforts, if we are hobbled by a retirement policy that disregards individual needs and individual abilities. The way it is, we can advise retirement for those who should retire; but too frequently, we can't keep active those who we know will stagnate if they are forced into inactivity. Maybe we *can* offer something better if we take the time to work on it. It certainly deserves our attention.

In summary, our aging population is a challenge to the citizens of our country and, in a special way, to the members of the medical profession. In an effort to remove many of the 15 million elderly people from what has been called a status of "social disability" medicine can play an important role.

Besides fulfilling our general obligations as citizens, and important as it is, I have tried to avoid this rather overworked theme, physicians can attack the medical aspects of the problem on four fronts: 1) *Research,* whereby new methods can be found to prevent the mental and physical stagnation that too frequently accompanies aging; 2) development of more *appropriate facilities* with high professional standards, in which care of elderly patients can be provided at a reasonable cost, 3) encouragement of *insurance plans* that will enable the aged to utilize all available resources whenever they need them; and 4) by studying methods, whereby more *realistic criteria* can be found to replace our existing system that forces retirement on people who are still productive and want to remain so.

It is only through this multifaceted approach that we can hope to accomplish the goal that has been stated often, but still looks a long way off—that we must strive not merely to add years to a person's life, but also to add life to his years.

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What Does the Electrocardiogram Mean?*

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A CONSIDERATION OF vectors will aid in the understanding of the meaning of the complexes in an electrocardiogram. A consideration of Einthoven's triangle, the triaxial reference system, and the hexaxial reference system will aid in the understanding of the inter-relationship of the different leads, one to the other.

When a heart muscle is stimulated, the plus and minus charges around the cell membrane become rearranged, and an electrical current is set up—the current of depolarization—which is similar to the discharging of a battery. This current can be represented as a vector. When the heart contracts, the electrocardiograph measures the sum of all these vectors that appear at different times. The initial impulse starts at the sinoauricular node and spreads downward and to the left. (Fig. I) It is picked up as a positive P in all but AVR, where it is negative. The impulse now reaches the AV node, then the Bundle of His, then the right and left branches of the Bundle of His in the septum. Normally there is not enough electrical activity at this stage to be recorded. This is the PR or PQ interval. In the septum the left bundle gives off filaments to the muscle earlier and in greater numbers; so that a vector is set up from left to right. This is the Q wave. From the septum, currents proceed from the endocardium to the epicardium of the ventricles. The left is larger and thicker than the right; so that the main vector is downward and

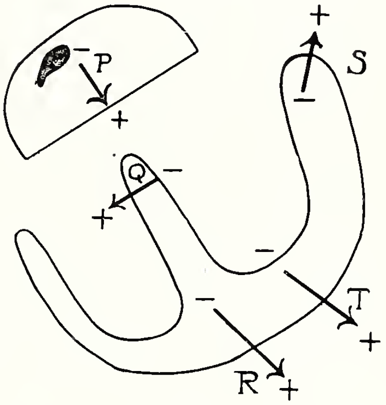

Figure I

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*Read before the 69th semi-annual meeting of the Delta Medical Society, April 9, 1958, Belzoni, Miss.

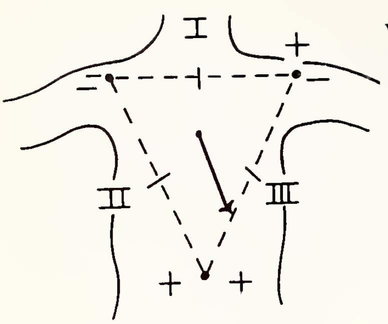

Figure II

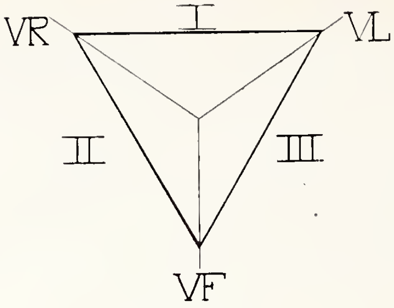

Figure III

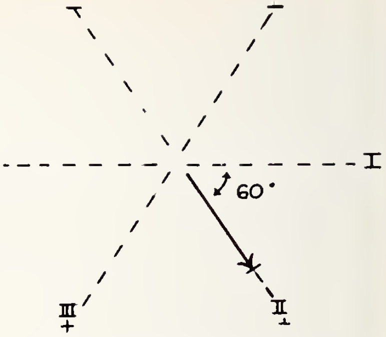

Figure IV

to the left, the R wave (ordinarily upright in all leads but AVR). The last muscle to be depolarized is the upper and outer parts of the ventricles. The main vector here is up and to the left, the S wave.

Now follows a period of electrical inactivity, the S-T interval. The T represents the repolarization of the muscle fibers. Theoretically, it should be in the opposite direction from the QRS, but for reasons not clearly understood the T wave is usually upright and almost parallel to the QRS vector. The angle between the T and the QRS vectors will vary with age and with disease.

Any lead measures the difference in potential or electrical force picked up by the plus and minus electrodes and records this force in millivolts. Lead I has its negative electrode on the right arm and its positive electrode on the left arm (Fig. II). It measures the vector of the current in the frontal plane flowing parallel to a line drawn between these electrodes. In Einthoven's triangle (Fig. III) it is represented as a line between the shoulders but in the triaxial reference system it is represented as a horizontal line drawn through the center of the heart (Fig. IV). Any vector moving toward the positive electrode is recorded as an upright wave on the electrocardiogram and any current moving away from the positive electrode as a negative wave.

Lead II has its negative electrode on the right arm and positive on the left leg. It measures any vector moving diagonally downward from right to left at an angle of sixty degrees with the bottom of the line representing Lead I. It is represented on Einthoven's triangle as the right inferior side and on the triaxial reference system as a line passing obliquely downward from right to left at an angle of sixty degrees to Lead I, through the center of this lead.

Lead III has its negative electrode on the left arm and its positive on the left leg. It measures vectors moving parallel to it or diagonally downward and to the right at an angle of sixty degrees to Lead I. It is the left inferior side of Einthoven's triangle and is represented on the triaxial reference system as a line passing through the center of the line representing Lead I, at an angle of sixty degrees to both Leads I and II.

The unipolar leads are called V (for volt) leads. The negative electrodes of these leads are attached at each upper extremity and the left leg and pass through a central connection; so that they cancel each other, giving a zero reading for the negative electrodes on the V leads and, in effect, making the negative connections at the center of the heart. (Fig. III). This gives a lower complex than the bipolar limb leads; so that they have been augmented and are called AVR (augmented right lead), AVL (augmented left lead), and AVF (augmented foot lead). AVR measures currents flowing toward the right shoulder and bisects the angle between Leads I and II. AVL measures currents flowing toward the left shoulder and bisects the angle between Leads I and III. AVF measures currents flowing directly down and bisects the angle between Leads II and III.

By superimposing lines representing the unipolar limb leads upon the triaxial reference system, we produce the hexaxial reference system with Lead I represented as a transverse line (Fig. V). Proceeding in a clockwise manner at an angle thirty degrees to Lead I, a line passing through the center of Lead I is AVR. The next line thirty degrees from this is Lead II, then AVF, then Lead III, then AVL. Each line forms an angle of thirty degrees with its adjacent lines. It will be noted that the lower ends of the lines representing AVR and AVL are negative while the lower end of AVF

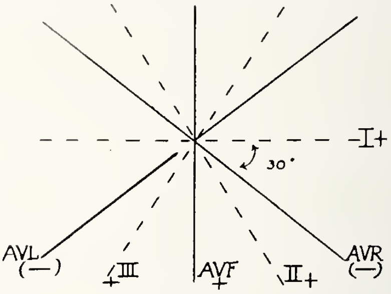

Figure V

is positive. The left side of Lead I is positive and the lower ends of Leads II and III are positive. On this hexaxial reference system can be plotted the vectors of all complexes in the frontal plane.

To obtain the vectors in the horizontal plane the chest leads are used. These are V leads with negative electrode zero (as in the unipolar limb leads) and the positive electrode in different positions around the heart on the chest. They give complexes as if the positive electrode were on the heart's surface. V_1 is placed in the fourth interspace to the right of the sternum. V_2 is in the fourth interspace to the left of the sternum. V_3 is midway between V_2 and ${}_4$V. V_4 is in the fifth is midway between V_2 and V_4. V_4 is in the fifth interspace in the mid-clavicular line. V_5 is in the fifth interspace in the anterior axillary line. V_6 is in the fifth interspace in the mid-axillary line. More exploring electrodes should be used if coronary infarction is suspected and not recorded on the conventional six leads.

A vector in space can be determined by plotting vector in the frontal plane and then keeping its same relations and plotting it in the horizontal plane. This can be done by using a pencil through a small card. Find the lead whose QRS measures nearest isoelectric, that is, the algebraic sum of the upward deflection and the downward deflection is nearest zero. Use this lead as an axis for the card. Then the pencil will point in the direction of the main vector. A reference system can be made for the chest leads similar to the hexaxial reference system and superimposed upon the hexaxial system (Fig. VI). However, with this reference system one has to use his imagination and have the chest lead reference system projecting forward into space. The position of the axis in the chest leads can be determined just the same as the axis of the vectors in the limb leads. This adds no new knowledge to the interpretation of the electrocardiogram but does give the student a good idea of what the currents in the heart are doing.

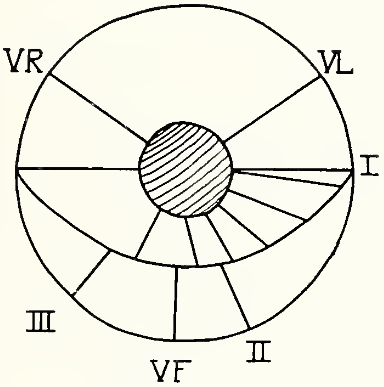

Figure VI

By comparing the relationship of the limb leads to the chest leads we can see why Leads III and V_6 are similar. We can see why the complexes are negative in AVR by looking at the hexaxial reference system. We can see why Lead III is capricious. The vector is usually almost perpendicular to Lead III. During inspiration the vector moves downward, giving a tendency to positive complexes. During expiration the vector moves upward, giving a tendency to negative complexes. It is unfortunate that the short, thick individual with a transverse heart is so prone to coronary artery disease!

By referring to the reference table we can see that Lead I should have upright complexes, especially P. An inverted P in Lead I means faulty application of the electrodes (the usual cause), dextrocardia, or arrhythmia.

The electrocardiographic picture of nodal rhythm makes sense. In nodal rhythm, the initial impulse starts at the AV node. The current moves upward through the auricles; so that negative P waves in II, III, and AVF and upright in AVL and AVR are recorded.

Bundle branch block makes sense. In right bundle branch block the diagnostic lead is V_1. The right bundle is blocked; so the current moves through the left bundle through the septum and from left to right, giving a small upright R wave, followed by a negative S wave from the left ventricle spread, then a slower and wider upright R wave from the slow muscle-spread through the right ventricle.

In the left bundle branch block V_6 is the diagnostic lead. Due to the blocked left bundle the septum is depolarized from right to left, giving an initial upward deflection as the wave is moving toward the electrode. The quick right ventricle effect causes a notch in the upward deflection, but this is soon overcome by the slower, greater potential muscle-spread through the left ventricle, giving a wide QRS complex.

The changes in coronary disease have a reason. The changes are due first to muscle ischemia, then to muscle injury, then to tissue death. When a coronary artery is occluded, the T in the electrode over the area supplied by this artery first becomes inverted, the ischemic T. Then the S-T segment becomes elevated, the current of injury, due to the muscle's discharging abnormal amounts of negative current; then the Q wave appears, due to tissue death. The Q wave is caused by dead tissue or scar tissue which is electrically inactive except as a conductor. It acts as any other tissue, not as excitable heart muscle tissue. This acts as a win-dow in the heart; so that forces inside the heart chambers are measured, rather than the forces in the heart muscle underlying the electrode. These changes are, as a whole, reversible. The picture changes from day to day, making serial tracings imperative.

One hears a lot of talk about the intrinscicoid deflection. This is not really too complex. It is the point where the current passes under the electrode under study, and it starts with the beginning of the QRS complex and ends at the top of the R. It is delayed in ventricular hypertrophy and in bundle branch block. The intrinsicoid deflection is spoken of as being prolonged. It should be spoken of as being delayed. The intrinsicoid deflection begins at the apex of the R wave. It is when the deflection started downward. It shows the point when the current starts passing away from the exploring electrode.

In conclusion I would like to make a few remarks concerning coronary artery disease:

1. An electrocardiogram does not reveal coronary artery disease but only shows changes secondary to muscle-cell change.

2. An electrocardiogram is often normal in patients with angina pectoris.

3. A pre-existing left bundle branch block may completely obscure the electrocardiographic changes of myocardial infarction.

4. Statements regarding prognosis in myocardial infarction should not be based on the extent of the EKG change.

5. The EKG may return to normal with old healed infarction.

6. As a general rule the patient has not had maximum rest as long as the EKG continues to change.

7. Always consider pulmonary embolus or pericarditis in the differential diagnosis. These conditions give T wave changes and S-T segment changes but do not give Q wave changes.

8. Always record the EKG in any case of chest trauma. It is possible to have a traumatic injury to the myocardium.

9. If acute infarction is suspected, obtain serial records and explore thoroughly. More than six chest leads can be used. One can even put the electrode on the back and in the esophagus.

Drugs, age, sex, clinical diagnosis, blood pressure, pregnancy, ascites, position of the patient during the recording of the tracing, and habitus of the patient have a bearing on the electrocardiographic tracing; so always give this information to the consultant who is reading your electrocardiogram. He is not engaged in a battle of wits with you. He is trying to help you; so do not try to confuse him. Try to help him.

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A MAJOR LEARNING PROGRAM—THE "DOCTOR PLAN"

How well we succeed in educating each and every child to the maximum of his inherent potential will ultimately determine his fate and our own. Upon the success of such an educational plan will largely depend the outcome of the world struggle between communism and the free peoples.

Half of our brightest high school graduates do not go to college. These are the children who are our potential leaders of the future and would profit most by a college education. The result: Huge loss of a precious natural resource.

The Soviet goal is to surpass the U. S. and thereby gain world leadership and world communism. They plan to do this by education, hard work and technologic (scientific) supremacy. We are, therefore, engaged with Russia in what has aptly been called "the cold war of the classrooms." We cannot afford to lose this "cold war," if America wishes to maintain its leadership in world affairs and escape world communism domination; yet we are severely handicapped because so many high school students do not take scientific subjects and so many talented students do not go to college. The future of our country and democracy is contingent, in a large measure, on the proper education of our superior and talented youth.

Such a major learning program is already in operation in Illinois. The Swanberg Kiwanis Foundation and the Kiwanis Club of Quincy, Ill., will gladly send literature. Write 209-224 W.C.U. Building, Quincy, Ill.

The Ocular Side Effects of Some Systemic Medications

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Perhaps we oftentimes miss the diagnosis in patients whose symptoms are due to side-effects of some systemic medication because the presenting complaint may be minor and transitory with no demonstrable disease process to account for it. In other cases the finds are striking. Unless we inquire about medications the patient is taking, valuable time may be lost in correcting his disability.

I invite your attention to a small series of cases involving ocular side-effects of some of our newer drugs.

A 41-year-old W. M. was referred because he complained of seeing halos and his vision was slightly blurred. Another ophthalmologist had ruled out glaucoma. The only positive findings on ocular examination were a very, very slight edema and pinkish tint in the exposed portion of the corneas. This seemed most noticeable in epithelial and subepithelial zone, but there was some edema of the deeper stroma. I was reminded of findings in workers in hydroquinone plants. Inquiry revealed that he had been taking aralen (chloroquine) one of the 4-aminoquinolines for two years. He could not be prevailed upon to discontinue it until a very thorough work-up at the Hopkins hospital showed him to be entirely free of disease. The corneas cleared when the drug was discontinued and Vitamin B complex given.

Atabrine (quinacrine) is another drug in this series and corneal edema was reported by Reese[1] in soldiers who had received the drug over a long period of time. Dame[2] reported scotomas and enlargement of the blind spot in officers given large doses of quinacrine.

Pamaquine is another quinoline compound reported to produce toxic eye signs. Other related compounds have not been adequately studied in this respect, but one might expect similar occurrences.

Quinine and Quinidine (the dextro-isomer of quinine) could not be called new drugs, but both contain a quinoline group. Hypersensitivity or idiosyncrasy to these two compounds is well known. The ocular toxicity is sometimes severe. The characteristic findings in these severe cases are markedly constricted arteries, constricted visual fields and the development of markedly pale discs. I have seen several such cases and I am sure most of you have also.

SULFONAMIDES: The sulfonamides generally have a low degree of toxicity for human nervous tissues. However, a number of cases of temporary and several cases of permanent visual loss from sulfonamides have been reported. Taub and Hollenhorst[3] reported four cases from the Mayo Clinic. Bucy[4] reported loss of vision in both eyes in a sixteen-year-old boy receiving sulfonamides. Many other references could be cited.

I wish to report the case of a 60-year-old W. F. who was given Kynex (one of the newer sulfonamides) as treatment for pyelitis. After three days she noted blurring of vision so that she could not recognize people a short distance away and could not read print smaller than the largest headlines of a newspaper. There was ptosis of both upper lids. Vision improved markedly within 24 to 48 hours after the drug was stopped. When I saw her several days later, she was still complaining of some blurring, but could get 20/20 vision with correction. There was still a definite drooping of the upper lids. Visual fields were normal. Ophthalmoscopic examination was not remarkable except for spasticity of vessels. Vitamin B complex was prescribed. The lids returned to normal within a few days. However, the patient reported that a subjective sensation of blurred vision persisted for five or six weeks.

CHLOROMYCETIN: Optic neuritis has been reported as a complication in patients receiving this drug.[5] My next case indicates a visual side-effect at the cortical level.

A 46-year-old W. M. was given chloromycetin 500 mgm. stat and 250 mgm. every four hours. On the second and third days he had noted that light bothered him and that the flat finish of walls seemed glary. On the third night he took a double dose (500 mgm.) so as not to disturb his sleeping hours. About two hours later he was awakened by what at first was thought to be a nightmare, but when it persisted after he was awake, he realized that it was a peculiar type of visual imagery which he likened to D. Ts. He was seeing a constantly changing cavalcade of grimacing human or ape-like figures. The figures were all black; tinged in green with a fire-red background. When the light was turned on and the eyes opened, the images disappeared, but each time the room was darkened or the eyes closed the figures reappeared. He studied the phenomenon for about two hours at which time it disappeared. The drug was discontinued. Next morning the blood count showed

60 per cent hemoglobin and 3500 W.B.C., a fall from 18,000 W.B.C.

ANTI-CHOLINERGIC DRUGS: The belladonna alkaloids and atropine have long been known to produce ocular side-effects when given systemically. They are so frequently used, however, that I wish to point out the following case as typical of one that might occur frequently.

A 39-year-old W M. who suffered from mild postprandial discomfort was given tr. belladonna by his internist. He came in complaining that he was having difficulty reading which was necessary to his professional duties. Examination revealed an insignificant refractive error and normal eyes except for accomodation. History indicated a possible mild food allergy and the fact that he was taking belladonna. Substitution of a small dose of Benadryl after meals relieved both the gastrointestinal and visual symptoms.

Monodral (Penthienate bromide) is a synthetic cholinergic blocking agent.

A thirteen-year-old W. F. came to the office complaining of poor vision and inability to read. External and ophalmoscopic examinations were not remarkable. Visual fields were normal. Homatropine refraction revealed the following:

O. D. -1.00 + 2.25 x 75 = 20/20
O. S. + .75 + 1.25 x 110 = 20/20

Post-cycloplegic examination confirmed the above, but showed the need for plus 2.00 add for reading. It was discovered that she was taking Monodral for a spastic colon. When the drug was discontinued, accommodation was found to be normal.

Drugs Used In The Treatment of Rheumatism and Arthritis

BUTAZOLIDIN: Neovascularization of the cornea has been attributed to this drug in one case.[6] Also retinal hemorrhages have occurred in patients receiving this drug, but there is no proof that the drug was causative in either instance.

Medical Center Miscellany

Eight new faculty members are helping teach school of medicine students at the University Medical Center this fall.

Three, including a department head, are replacements while five are additions to the faculty.

The school's more comfortable money situation, eased by legislative approval of the requested biennial budget, enabled the University to strengthen some spots in the medical school program, according to Dr. D. S. Pankratz, dean.

Commenting that the 1957 accreditation team had advised the administration to add faculty in specific areas, the dean pointed out that the school's rapid enrollment increase also called for more teachers to maintain topnotch instruction.

Spread half and half through the basic and the clinical departments, the new faculty members are: Dr. W. Lane Williams, professor of anatomy and chairman of the department; Dr. Charles L. Dodgen, associate professor of physiological chemistry; Dr. Bernard Kaufman, associate professor of physiology and biophysics; Dr. Emmett J. Johnson, assistant professor of microbiology; Dr. M. A. Carnes, assistant professor of anesthesiology; Dr. Lois Mosey, instructor in obstetrics-gynecology; Dr. O. W. Hyman, Jr. instructor in radiology and Dr. Edwin F. Chobot, instructor in neurosurgery.

Anatomy Chairman

An associate professor of anatomy at the University of Minnesota since 1949, Dr. Williams assumed the anatomy chairmanship Oct. 1, replacing Dr. Ira Hogg, who retired in July.

The 45-year-old anatomist will continue his cardiovascular disease and cancer research work at the Center. He has published 90 papers on these subjects primarily.

Dr. Williams got his Ph. D. degree at Yale after having received his M. A. at Duke and his B. S. at Wofford College, Spartanburg, S. C. He is a South Carolinian by birth.

He has been on the Minnesota faculty since 1945 when he was named an assistant professor of anatomy. For the previous two years, he has been an assistant professor at Louisiana State University.

Dr. Williams was a University Scholar and a Research Fellow of the Donner Foundation at Yale. He has been an instructor there and at the University of Rochester School of Medicine and Dentistry.

He is a member of Sigma Xi, the American Association of Anatomists, American Physiological Society, American Society for Experimental Research, American Association for Cancer Research, American Federation for Clinical Research, Endocrine Society, Society for Experimental Biology and Medicine, the New York Academy of Science, Histochemical Society and Minnesota Heart Association.

Two Associate Professors

Dr. Dodgen has been an assistant professor of biochemistry at State University of New York Downstate Medical Center for four years before coming to the Medical Center in September.

He is a Texan and got his B. A. degree at Texas Christian University. He received his Ph. D. at Vanderbilt. Dr. Dodgen holds membership in Sigma Xi and the American Academy for the Advancement of Science.

Coming to the Medical Center in October, Dr. Kaufman has been in practice in Whitesburg, Ky. He is a graduate of the University of Pennsylvania Medical School and got his M. A. at Johns Hopkins and B. A. at Pennsylvania. He interned at Philadelphia General hospital.

Dr. Kaufman was a biology instructor at Hofstra College for one year and was a research assistant in the Ole Miss physiology department in 1954.

Markle Fellow

The new assistant professor of microbiology, Dr. Johnson, has just completed a year's postdoctoral research in bacterial physiology as a Markle Fellow at Stanford University.

Both he and his wife hold Ph. D. degrees in bacteriology from Louisiana State University. Dr. Johnson graduated with highest honors from Loyola University and got his M. S. degree at LSU where he was a predoctoral fellow of the Southern Association. He also served as an instructor in bacteriology there.

Dr. Johnson belongs to Sigma Xi, the American Society of Bacteriologists and the American Association for the Advancement of Science.

Add Clinicians

An assistant professor and three instructors are helping shoulder the teaching load in the third and fourth years where enrollment has nearly doubled since the first class was graduated in 1957.

Dr. Carnes, assistant professor of anesthesiology, replaces Dr. J. K. Seale. Dr. Carnes is a UT graduate and took his anesthesiology residency at Vanderbilt after having been in general practice in Maryville, Tenn., for six years. He is a member of the American Society of Anesthesiologists and had been in practice in Nashville before joining the medical school faculty.

Dr. Mosey, instructor in ob-gyn, comes to Jackson from Connecticut where she had specialized training at Yale University teaching hospital, Grace-New Haven, and at the New Britain General Hospital, New Haven. She replaces Dr. John Lindley.

She received her M. D. degree at Boston University in 1953 after having earned her M. A. there two years earlier. She graduated cum laude from the University of Wyoming.

Dr. Mosey interned at Bellevue Hospital and took a year's residency in medicine there before beginning her ob-gyn work. She is a member of Sigma Xi.

Dr. Hyman, instructor in radiology, holds his M.D. from the University of Tennessee. He got his B.A. at the University of North Carolina. He interned at the University of Kansas Medical Center and took his radiology training at the Mayo Clinic.

Formerly a neurosurgery instructor at Vanderbilt, Dr. Chobot holds this same spot at Mississippi. He completed his residency at Vanderbilt after having also taken advanced work at the Medical College of Virginia and New York Hospital-Cornell Medical Center. He is a graduate of the University of Tennessee medical school and has a bachelor's degree from Yale.

The way of the world is to praise dead saints and to persecute living ones.

—Nathanie Howe

President's Page

Most physician-members of the Mississippi State Medical Association, if called upon to characterize the past decade and a half in terms of their profession's plight, might respond with a one-word reply, "Crisis." While nobody could successfully refute this terse description of fifteen years of regimentation, encroachment, and intervention, more emphasis ought to be placed upon our successes and achievements. Generally, I think of this positive progress as having been brought about in three ways: through medicine's bodies politic, through medicine as a science, and through physicians as individuals.

By far, the most important, dramatic gains and successes are in purely scientific areas, principally thought of as diagnostic and therapeutic advances. Daily we literally perform miracles in healing with drugs which would have brought expressions of disbelief from physicians of a generation ago. If we marvel at the era of nuclear physics, astronautics, jet flight, and engineering accomplishment, then what should our reaction be to the unbelievable advances in the art and science of healing? And yet we know that the surface has only been scratched. More than likely, the next twenty-five years will see further victories in the fight against cardiovascular disease, malignant neoplasms, mental illness, and presently unconquered virus infections.

The American system of medical care is truly unique in quality and availability. Of no less importance than scientific advancement are the strides made in achieving the present effective distribution of quality care. Throughout the entire nation, about 98 per cent of all Americans are but minutes away from a doctor and a hospital. There is no basis in fact for anyone's saying that medical care is economically unavailable and especially is this true in Mississippi. For most Americans, extensive care is economically convenient because of voluntary health insurance, better incomes, and a growing awareness of the value of preventive medicine.

Doctors as individuals could not possibly have brought this economic miracle to pass but doctors as participants in medical organization did achieve this. The county medical society, the state medical association, and the AMA provide the only possible climate for this unified progress, doing things for physicians which they cannot do for themselves alone. And therein lies proof that medicine's detractors deal in half-truths. The best example of this is found in the 102 years of MSMA's proud history.

Our association, voluntarily supported by the dues of ethical, dedicated physicians, sponsored laws creating the State Board of Health before the nineteenth century reached the three-quarter mark. For 60 years, MSMA has protected the people from the danger of licensed cultism and health quackery. The nation's most stringent anti-abortion law was put on Mississippi's statute books singlehandedly by our state medical association.

Who assumed leadership in the hospital construction program and led the way to finance and build the new four-year medical school? Who has sought sound medical legislation, never once asking special favor or professional advantage? Who has built the most powerful force for service and good among Mississippi's voluntary organizations? Four words give the answer in each case: Mississippi State Medical Association.

Physicians as individuals are responsive to duties of citizenship and community service obligation. That isn't to say that the M.D. degree simultaneously confers mortal sainthood, and nobody, least of all physicians themselves, claims perfection for the medical profession. Taken as a group, doctors measure up in service and civic responsibility.

The past is today's inspiration to meet the challenging problems in science, socioeconomics, and our individual practices which are before us. We must never expect to rest on laurels because service and achievement are merely the prices we must pay for the privileges of professional skill and public confidence. A noble profession, unified through a dedicated organization, will be better equipped to increase its service capacity and meet new challenges. MSMA will stand uppermost in discharging these responsibilities only as we doctors give it the strength and support it must have.

Guy T. Vise, M.D., President

A little rebellion is a good thing. It is a medicine necessary for the sound health of government.

—Thomas Jefferson

INTERPRETING MEDICAL LITERATURE

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CARDIOLOGY

THE SYNDROME OF DEXTROVERSION OF THE HEART

By ROBERT P. GRANT

(*Circulation*, Vol. 8, No. 1, July—1958, Page 25)

The author outlined, on the basis of three personal cases and 100 additional cases collected from the literature, the difference between dextroversion and mirror image dextrocardia. Mirror image dextrocardia, in which the anterior-posterior relationships of the various parts of the heart are normal but the right to left orientation is reversed, is easily recognized because it is practically always associated with some degree of abdominal situs in versus, rarely are there any other cardiac abnormalities and the electrocardiogram is distinctive in that it produces a completely inverted P, QRS and T waves in lead 1 with the upright R waves over the right precordium instead of the left. Another cause of dextrocardia is dextroposition, in which an otherwise normal heart is shifted to the right by some extra-cardiac factor, such as eventration of the left diaphragm, fibrosis of the right lung, etc., and is easily recognized. The third case is dextroversion, and, although being least familiar, is extremely important because it is frequently accompanied by other intracardiac abnormalities, often of a serious nature.

In general, dextroversion consists of a rotation of the ventricular part of the heart to the right, as in turning the pages of a book, with the atria remaining in normal position. Since the atria are in normal position, a P wave in the electrocardiogram in lead 1 is upright, differentiating it from mirror image dextrocardia. The QRS and T waves in dextroversion depend on the type and degree of associated intra-cardiac malformations. These intra-cardiac malformations are frequently those involving the conus and original truncus areas to the heart, resulting in pulmonary stenosis, pulmonary atresia, the tetralogy of Fallot group, and frequently transposition of the great vessels. The aorta, in almost every case, can be seen to descend in its normal leftward position and the appearance of the heart in the PA chest film is obviously not a "mirror image" appearance but shows rather marked variation from this configuration, because it is simply rotated 180 degrees around a long axis into the right chest. Therefore, the aorta, being fixed superiorly, stays in its normal leftward position.

COMMENT: A few chest x-rays reviewed rather briefly will immediately fix the differences from a roentgenologic standpoint, in one's mind, while the obvious variations in the P wave in the two conditions separate them entirely. It is of extreme importance that they be separated, because of the chance of corrective intra-cardiac surgery, which, of course, is of much more importance than the dextroversion itself.

HIPPOCRATES

The golden thread of scientific medicine though very fragile at times can be traced back across several thousand years. But we usually just go far enough back to honor Hippocrates as the Father of Medicine. What he knew then may seem trite now, but his observations and his impact on medicine and the impetus he gave it, impels us to call him Father of Medicine as we do George Washington Father of his Country. He rendered great service in separating medicine from magic. He stressed the importance of careful bedside observation, honest thinking and honest practice. He was revered for a high standard of medical morals including the famous Hippocrates Oath. It is said that his clinical descriptions of many diseases would be up to date for a medical student's notebook today. His treatments included simple and sensible directions such as rest, diet, fresh air, massage, blood-letting. He treated wounds by keeping them dry, but if he did irrigate he used boiled water or wine. The Good Samaritan may have known about his surgical treatment when he bound up the traveler's wounds and poured on oil and wine. It may be assumed that Dr. Luke knew something of Hippocrates and his treatments. The Father of Medicine was born in 460 B. C. and is supposed to have lived to be about 90 years of age.

NOTES FROM THE EXECUTIVE OFFICER OF THE

MISSISSIPPI STATE BOARD OF HEALTH

A. L. Gray, M.D.
Executive Officer

TO: PHYSICIANS IN MISSISSIPPI

This monthly page in *The Mississippi Doctor* will usually be comprised of a series of brief items which might be of most interest to private physicians. Questions from physicians will have suggested most of the items; obviously the items can only be brief. More detailed information and explanation of any item will gladly be given any physician requesting it.

COURT ORDER REQUIRED FOR CHANGE IN BIRTH CERTIFICATES

A recent opinion of the Attorney General stipulates that the State Board of Health nor anyone else can make any change in a birth certificate after it is filed except on court order. An opinion was requested because of the frequent and increasing demands by parents, guardians, foster parents, and others to change names, birth dates, and other significant data. This shows the necessity of physicians taking great care in preparing birth certificates. This is pointed out by Miss Margaret Rice, director of our new Division of Public Health Statistics which has the tedious and exacting job of collecting, filing, and making these certificates useful. An example of the demand on these vital records is that in August, 1958, over 8,000 certified copies were issued.

LABORATORIES APPROVED FOR PREMARITAL BLOOD TESTS

According to Dr. H. C. Ricks, director of Public Health Laboratories, who has responsibility for approving laboratories for performing the premarital blood test under House Bill No. 51, Laws of 1957, there are now 59 approved laboratories well dispersed throughout the state contrasted to 26 as of July 1, 1958. This makes possible a report on serology in any section of the state within a few hours for those who are in a hurry to file their medical certificate with their application for marriage license. Physicians are reminded that the medical certificate is to be made in duplicate and given to the patient. A copy of the laboratory data slip must be sent by the laboratory to the Division of Preventable Disease Control, Mississippi State Board of Health. This is required of all physicians and laboratories performing the test.

SBH CONCERNED OVER ENCEPHALITIS EPIDEMIC

The Executive Officer and Dr. Durward Blakey, director of Division of Preventable Disease Control, are cautiously and watchfully concerned about the encephalitis epidemic in Formosa and Japan. One reason for this concern is the high fatality rate of the disease there and the extent of the epidemic. Another reason for concern is that this country has the birds, fowls, and animals that could become extensive reservoirs of the virus causing the disease and many areas have the type of mosquitoes which transmit the virus from these reservoirs to the human population. Still another concern is that extensive defense, commercial, and tourist relations between our country and those epidemic areas are realities.

An outbreak here might develop into epidemic proportions before it is recognized as anything more than a sporadic case or cases of encephalitis of unknown cause. If such does occur, our private medical and public health machinery could justly be severely criticized. Physicians should report promptly all encephalitis cases to their local health department so that their occasional case may be considered in terms of other similar cases in the area, state, and nation.

STAPHYLOCOCCAL INFECTIONS IN HOSPITALS

Three hospitals in the state have recently requested epidemiological assistance from the Division of Preventable Disease Control and Public Health Laboratories in regard to staphylococcal infections in infants and mothers. Generally, they showed considerable prevalence of staph in the nose and throat of medical, nursing, and housekeeping staff. The strain of staph isolated from cases in infants and mothers seemed to reflect the strains in the nose and throat of the staff. Infections in infants and mothers were quite common and comprised primarily of skin and breast lesions. The defense against this problem seems to be increased vigilance in hospital housekeeping.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

New Officers

Doctor R. J. Moorhead of Yazoo City was chosen president-elect at the 10th Annual Assembly last month. He will assume office a year from now.

Doctor A. T. Tatum of Petal became president, succeeding Doctor John C. Longest, State College.

Other officers are:

Vice-president—Louis F. Rittelmeyer, Jackson
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District X—William Kellum, Tupelo

Delegates—Moncure Dabney, Crystal Springs
Wm. E. Lotterhos, Jackson
Alternate delegates—John C. Longest, State College
A. V. Beachman, Magnolia.

Assembly Post-script

The Assembly program was excellent. It featured an informative program on physical diagnosis. Banquet speaker Clayton Rand and luncheon speaker Dr. Howard Nelson gave entertaining and inspiring addresses.

To the speakers and scientific exhibitors, we extend our sincere gratitude. Especially to the 38 technical exhibitors, whose support is so important, we say thanks, and please come back next year.

Category I Courses

Approval was obtained for the following meetings for category I post-graduate credit in 1958:

1. Postgraduate Seminar - with round-table discussions, January 22, 5 hours.
2. Recent advances in care of amputees, February 28, 5 hours.
3. Cardiovascular Seminar, April 2, 3 and 4, 20 hours.
4. Medical-Dental Seminar on Hypnosis, April 10, 11 and 12, 18 hours.
5. Mississippi Academy of General Practice Annual Assembly, September 17 and 18, 9 hours.
6. First Annual Cancer Seminar, December 4, 6 hours. (This will be held at the University Medical Center, Jackson, beginning at 9:00 a.m.).

Note: These are the only courses held in Mississippi in 1958 that are approved for Category I credit. Physicians who have spent time as clinical trainees at the University Medical Center may obtain Category I credit for this training upon certification by the chief of the service involved of the number of hours training obtained.

In addition to these, the A.A.G.P. Assembly in Dallas, the New Orleans Graduate Medical Assembly, the Mid-South Postgraduate Medical Assembly, and the Gulf Coast Clinical Society (held in Pensacola this year) are approved for Category I credit.

Walter Reuther is already within reach of controlling Congress. He has 175 members in whose elections he aided with union funds and other help. Right now, he is operating in 300 congressional districts, helping his selected candidates. His goal, to elect 220 members who will vote for labor union policies—an absolute majority of the lower House.

If this happens, it means more confiscatory taxes, destruction of higher incomes, socialized medicine, more inflation, a deluge of socialistic measures, such as labor unions have imposed upon England.

Of the gigantic funds of labor unions—$612 million of annual income—more than $100 million spent politically, can be opposed only by the lowest cost mechanism, statements from the *Congressional Record* distributed under frank in the 300 districts where Reuther is working.

SMA

Don't wait any longer to make definite plans for the Southern Medical in New Orleans November 3-6. New Orleans is a great cosmopolitan city with a medical atmosphere equal to the best in the nation, made rich by many who helped to make medicine what it is, who nurtured it on its way to its present growth.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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FREE CHOICE OF PHYSICIAN

You hear a lot of talk these days about "free choice" and how it applies to patients and physicians. The principle of the patient's right to choose his own doctor is stoutly defended—and rightly so—as basic to the "democratic way." Hardly anybody you know disputes this principle.

Every once in a while though, something happens that makes you stop and re-examine your thinking. Recently, Henry J. Kaiser announced a new closed panel health plan and a 4-million-dollar medical center scheduled to open in Honolulu this December 1. Kaiser's Permanente plans and hospitals on the West Coast are well known, and, it should be noted, highly successful. Obviously Kaiser anticipates an equally successful venture in Hawaii.

What does all this have to do with free choice of physician? Plenty. In fact, it could be said, everything! This is so, not just because Kaiser's closed panel plans forbid free choice of physician, but because the principle of free choice apparently holds so little appeal for so many thousands of people. The question is: Is this appearance a true reflection of the desires of the people, or is some factor other than free choice of even greater importance to them?

Kaiser's main selling point probably answers that question best. He offers *greater coverage* for *less money*. It's as simple as that. No guarantees of good health. Not even a promise of better medical care. And of course, subscribers can't choose their own physicians. But they are promised—and they get—medical care at a price they can afford.

It is purely a matter of economics, which you thought it was all along. But have you stopped to think it through? Yes, there is more to it than that. The frighteningly simple fact is that many of the people who appear to care so little about "free choice" really haven't any freedom of choice to begin with!

To illustrate: A man in a restaurant is trying to decide between the blue plate special ($1.25) and the deluxe dinner ($3.50). If his wallet is loaded, that's fine. But if he has only $1.25, he is not free to choose at all; he *must* take the lower priced meal if he wants to eat.

Closed panel plans don't really represent much of a departure from past practices. The "medically indigent" have never had free choice of physician in charity hospitals and clinics. In return for free or cut-rate care, they forfeit their privilege of free choice — it has been going on for years.

But these plans do pose a challenge, and it is this: If we wish to preserve the principle—and practice—of free choice of physician, we must see to it that good medical care is available at a cost most people can afford. This applies not only to reasonable fees by physicians and surgeons but also to adequate insurance coverage for hospitalization and major medical and surgical expenses.

We can continue to defend the principle of free choice. It is good and therefore easy to defend. But as practical men, we had better guard against making the mistake of trying to sell deluxe dinners to people with just enough money for the blue plate special. After all, California and Hawaii are not so far from Mississippi that "it can't happen here." —L. F. R.

AMA NEWS

For the last ten years the American Medical Association has been reaching its strong arm of service more and more to the practicing physician. *Today's Health* has become a salient service to the lay mind. The Association has now inaugurated a new service—*AMA News*—with the goal of packing more news "of interest to doctors into each issue than will be found in any other one package." Its first issue is just out. We congratulate the AMA on this forward and intelligent venture. Excerpts from the first editorial follow:

> Editorial content will be non-technical, featuring articles of special interest to doctors in the medico-economic and socio-economic fields. It will reflect all aspects of a physician's life, his work, his problems.
>
> Its purpose is practical—to help doctors figure out the day-to-day problems that go with practicing medicine, bettering the health of the community and the profession of medicine.
>
> It will be *The News'* aim to keep physicians informed on legislation affecting the practice of medicine, trends in business and investments, news and court decisions in the medico-legal field, and to report the who, what, when, how, and why in the world of medicine.
>
> We hope, too, that the newspaper will serve as a means of exchange of useful, interesting facts and ideas.
>
> Our goal is to make *The AMA News* medicine's greatest conduit of communication. And through our editorials, we hope to help stimulate, challenge and strengthen the moral and intellectual foundations of the democratic way of American medicine.

PAST SIXTY-FIVE

We agree with Dr Rittelmeyer in this issue that the time is at hand when we must do something determinate about our aging population. To set aside and refuse to utilize the knowledge and the wisdom of our men past sixty-five is poor human economy. As long as two thirds of the world is hungry, poorly clad, and inadequately housed, it is economic waste to discourage our men and women past sixty-five from producing. The idea that retirement is the end for which one works and lives, is fallacious. To remain productive and creative is to fulfill life's highest purpose. Such a concept honored and obeyed can make age less a matter of years than circumstance.

As Dr. Rittelmeyer suggests, there are many angles to the problem. Provision for the dependent aged is distressingly inadequate. There our problem becomes civic, economic, and political.

PRESIDENT'S PAGE

Dr. Guy Vise begins his President's Page with this issue. The job of being president of the state medical association is no trivial task. Dr. Vise is doing the job well. An active member of the Academy of General Practice, able in general medicine and surgery, a thorough-going citizen as well as doctor, he has a firm command of the work his office demands.

NEW DEPARTMENT

You will note in this issue of the journal a new department by Dr. A. L. Gray, "Notes from the Executive Officer of the Mississippi State Board of Health." Dr. Gray's first installment is informative and valuable to all practicing physicians in the state. We are very grateful to Dr. Gray for this aid to the doctors of the state and for thus making the *Mississippi Doctor* more helpful to them. Dr. Gray is worthy and well prepared to succeed the widely known Dr. Felix J. Underwood. He is thoroughly trained and a student of public health, able and dependable.

FESTIVAL OF FAITH

On October 2, in Tyronza, Arkansas, the "Festival of Faith" staged its greatest conclave. The only meeting of its kind in the world, the big idea behind it is to bring men of all walks of life together for better understanding in human affairs. Dr. L. H. McDaniel is the father of this idea. His ability and ingenuity in putting on this festival of information and inspiration sets him apart as a benefactor to man. We offer our cordial congratulations.

FIGHTING ARM

Someone has observed that "the fighting arm" of medical organizations turns out to be the American Association of Physicians and Surgeons. For many years this association has waged a strong fight against socialism in all of its forms. In Arkansas Dr. L. H. McDaniel of Tyronza has been very active in this organization. In this state Dr. Frank Acree of Greenville has been outstanding. Many prizes and awards have been given for essays on "The Folly of Socialized Medicine."

MAGP

The Academy of General Practice executed a very fine scientific program in Jackson, September 17 and 18. This organization is rendering a fine service. It has raised the batting average of many practitioners and it has been a bulwark against state medicine. Its programs are always good. The program committee nearly always looks for able men and men who are able to put their information in an understandable language.

Dr. A. T. Tatum of Petal succeeds Dr. John C. Longest of State College as president.

MR. FOWLER AAHP PRESIDENT

The American Association for Hospital Planning, meeting concurrently with the American Hospital Association in Chicago last week, installed Mr. Foster Fowler as president for the coming year. Dr. Margaret DuBois of Ohio was named president-elect.

The American Association for Hospital Planning is an organization of persons concerned with the planning of hospitals as its name implies. By far the bulk of the membership is composed of persons employed by state agencies administering the Hill-Burton Program, though it contains as well persons employed by city and regional hospital councils, hospital architects, and hospital consultants.

It was organized in 1947 primarily to provide a forum for the state agency personnel, but has since expanded its activities and membership rolls to include a broader range of subjects and personnel.

Dr. D. V. Galloway of Mississippi was the first president and with the installation of Mr. Fowler as president, Mississippi becomes the first state to be twice represented in the chair of that organization.

Many will read the above with interest and with pleasure. Dr. Galloway was executive secretary of the Commission in the beginning of the Hill-Burton Program. He was outstanding and we all know that Mr. Foster Fowler is doing this work exceedingly well. With the help of the Hill-Burton aid Mississippi is on the way with one of the very best hospital systems in the nation. The life of the bill has been extended five years and it is believed that it may live on and on and serve a great purpose.

ERRATUM

We regret that the authorship of “Chronic Idiopathic Jaundice (Dubin-Johnson Syndrome)” omitted the name of Dr. James P. Gould. The paper was published in the August issue of *The Mississippi Doctor,* pages 49-50.

News and Comment

SMA PRESIDENT

Dr. West

Dr. W. Kelly West of Oklahoma City, the president of the Southern Medical Association, was born in Uvalde, Texas, November 11, 1890. He is the son of Dr. A. K. West, pioneer Oklahoma physician.

He was graduated from the University of Oklahoma School of Medicine in 1915, and has continued to have a strong interest in his alma mater where he is professor of orthopedic surgery.

Dr. West's great interest in the University of Oklahoma School of Medicine stems in part from the strategic role in the founding of the school by his father. Before Oklahoma was a state, Dr. A. K. West, who had given up a career as a Texas rancher to study medicine, bought a building along with five other Oklahoma City physicians and started teaching medical students. This school was a part of the Epworth College which later became the

University of Oklahoma School of Medicine.

Dr. West holds membership in the American Orthopedic Association, the Clinical Orthopedic Society, the American College of Surgeons, the American Railway Surgeons Association, and is a member and medical advisor of the Oklahoma Chapter of the National Foundation for Infantile Paralysis. He is a member of Phi Beta Pi and Alpha Omega Alpha medical fraternities.

Dr. West was married to Miss Miriam McGuffin of Guthrie, Oklahoma, in 1918. Mrs. West shares her husband's enthusiasm for the Southern Medical Association's work having been an active member in the Woman's Auxiliary and serving as its president in 1939.

JOINT COMMISSION ON ACCREDITATION OF NURSING SCHOOLS APPROVED BY AHA DELEGATES

When the House of Delegates of the American Hospital Association met on August 18, 1958, in the arena of Chicago's International Ampitheatre there was consentient interest in the nursing problem of this country. The American Hospital Association went on record expressing dissatisfaction with the present system of accreditation of nursing schools by the National League of Nursing and voted to establish a joint committee made up of representatives from the American Hospital Association, the American Medical Association, and the National League of Nursing to be responsible for the accreditation of hospital nursing schools. They requested that this be done as rapidly as feasible and withdrew their support of accreditation by a single system. The House of Delegates indicated that the National League of Nursing had been unrealistic in some of their actions concerning accreditation.

HOSPITAL MEETING

The Mississippi State Hospital Association will hold its annual session in Biloxi this month. The State Hospital Association is steadily growing in size and importance. This year Dr. Dave Wilson, the able administrator of the medical school hospital, is the president. The incoming president is Mr. Lester Tuck, administrator of the Pascagoula Hospital. He is also a member of the Mississippi Commission on Hospital Care. He is an able administrator and will be found doing all he can to coordinate the work of the hospital, the medical association, public health work, and the medical school. We should be very proud of the progress made by each one of these organizations. These organizations should know and understand each other and work together in unity of purpose to give the people of Mississippi the very best medical service to be found in the nation. Each one has its place and each has its responsibility. There is work enough for all and there is glory enough for all in building health assets for the greatest state in the union.

We congratulate the Mississippi State Hospital Association on its progress and we are looking to the future with pride as the above facilities merge into a unity of purpose for better medical service.

AMITE-WILKINSON SOCIETY

The Wilkinson-Amite Medical Society held its quarterly meeting with doctors' wives present for an excellent dinner served by Miss Bowles and her staff of nurses, at the new Field Memorial Community Hospital in Centreville in June.

The guest speaker was Dr. Abner Glover, senior surgical resident on Tulane Service of Charity Hospital, New Orleans, La. He gave a most interesting and instructive talk on the problem of tetanus prophylactic treatment and treatment if the disease is contracted. He was accompanied by his wife. Other guests were Dr. and Mrs. Paul Jackson of Clinton, La., Mr. and Mrs. Lollar of Centreville. Mr. Lollar is the new hospital administrator for the Field Memorial Community Hospital.

Again on September 8, the doctors and their wives met in Centreville. At this time the program was presented by Mr. Roland B. Kennedy, executive secretary of the Mississippi State Medical Association, and Mr. Charles Flynn, both from Jackson. Mr. Kennedy spoke on the relation of the hospital to its staff, and Mr. Flynn spoke on the problem of medico-legal coverage of both hospital and doctor to protect against suits.

A lively discussion ensued, with questions and answers between members and the guest speakers, effecting a most instructive and timely program.

NORTHEAST MEDICAL SOCIETY

At the Northeast Mississippi Medical Society's smorgasbord dinner in Tupelo in September the guest essayist was Dr. James D. Hardy, professor of surgery at the University of Mississippi Medical School. A stimulating panel discussion on pediatric surgical problems with Dr. Hardy as moderator and Drs. Love, Tharp, and McEwen as members of the panel followed the essayist's presentation. It proved to be one of the most interesting and informative meetings the society has ever had.

Old faces at the meeting are being rapidly replaced by new and younger ones. Dr. V. B. Philpot of Memphis was welcomed, a former member who has always had a deep interest in this society and has done much to help build it.

SMA DEDICATES NEW HOME

The Southeastern Surgical Congress has had its home in Atlanta for several years. This organization is the meeting ground for general surgeons and those in special fields. Early in its life it saw the need of having a permanent headquarters location and building.

Still one of the few, our own Association headquarters, modern, up-to-date, is situated in the shadow of the new and rapidly growing University Medical Center. It is a fine evidence of the progressive march of medicine in Mississippi. This headquarters is a valuable facility in rendering a better service to all the doctors of the state and in turn to all the people.

As in the home there must be an understanding and loving interest in each member of the family, so may the homes of these organizations shelter a solicitous interest in every doctor making up each organization.

On the seventh of September, and after fifty-two years of fine service to the doctors of the Southern States, the Southern Medical Association dedicated its permanent headquarters home in Birmingham, Alabama. The home activates the spiritual and the economic life of a people, stimulates vision, reinforces patriotism and aids mightily in building an adequate citizenship. The home is all but essential to a liberty-loving and a God-fearing people.

It is fitting to have this home of Southern medicine located in Birmingham where dwelleth the spirits of Seale Harris, Marion Sims, Gen. William Gorgas, and others. The spirit of the Southern radiates from this industrial city and medical center, Birmingham, to the 16 states of Dixie.

ANNOUNCEMENT

Announcement is made of the opening of Mid-South X-ray Company, 1786 Madison Avenue, Memphis 4, Tennessee. The company will be exclusive distributors for Med-X Developing Chemicals, H. G. Fischer and Company, Universal X-ray Company, and other allied lines.

FIFTY-YEAR BIOGRAPHICA

DAVID ALLEN RATLIFF

David Allen Ratliff, son of William Quitman and Lucy Yarbrough Ratliff, was born in Clinton, Louisiana, July 9, 1884.

He attended school in Clinton, Louisiana, and also Louisiana State University, Tulane Medical School and was graduated from Chicago College of Medicine and Surgery (now Loyola University School of Medicine) in 1909.

Following graduation, Doctor Ratliff did extensive postgraduate work at Chicago Lying-In Hospital. He located for the practice of medicine in a town between Magnolia and Liberty—later he located at McComb where he practiced three years and in 1912 moved to Columbia where he has practiced continuously since.

Doctor Ratliff served as Marion and Pike County Health Officer, and assisted in organizing the Marion County Health Department. He is an honorary member of the South Mississippi Medical Society and holds membership in the Mississippi State Medical Association and Southern Medical Association. He is a Mason, elder in the Presbyterian Church and was chief instructor of Obstetrics and Gynecology for Nurses at the Columbia Hospital for many years. For twelve years he served on the city school board.

On May 15, Doctor Ratliff was honored with membership in the Fifty-Year Club in recognition of fifty years of faithful service to his fellowman and to his community. He continues the practice of medicine at Columbia where he has been for more than forty years.

DEATHS

DR. R. J. CRISS

Services for Dr. Ralph Jackson Criss, Sr., 82-year-old Coffeeville physician who had practiced in the area more than 50 years, were held September 12 at Coffeeville Baptist Church. Burial was in New Hope Cemetery.

A graduate of the University of Tennessee Medical School, Dr. Criss was supervisor of beat one in Yalobusha County for 12 years and served as county public health officer for 25 years. He retired from practice several years ago.

Survivors include three sons, Dr. R. J. Criss, Jr., of Grenada, Dr. W. J. Criss of Coffeeville, and F. W. Criss of Grenada; two daughters, Mrs. G. W. Armstrong and Miss Elizabeth Criss, both of Coffeeville; 12 grandchildren; and one great-grandchild.

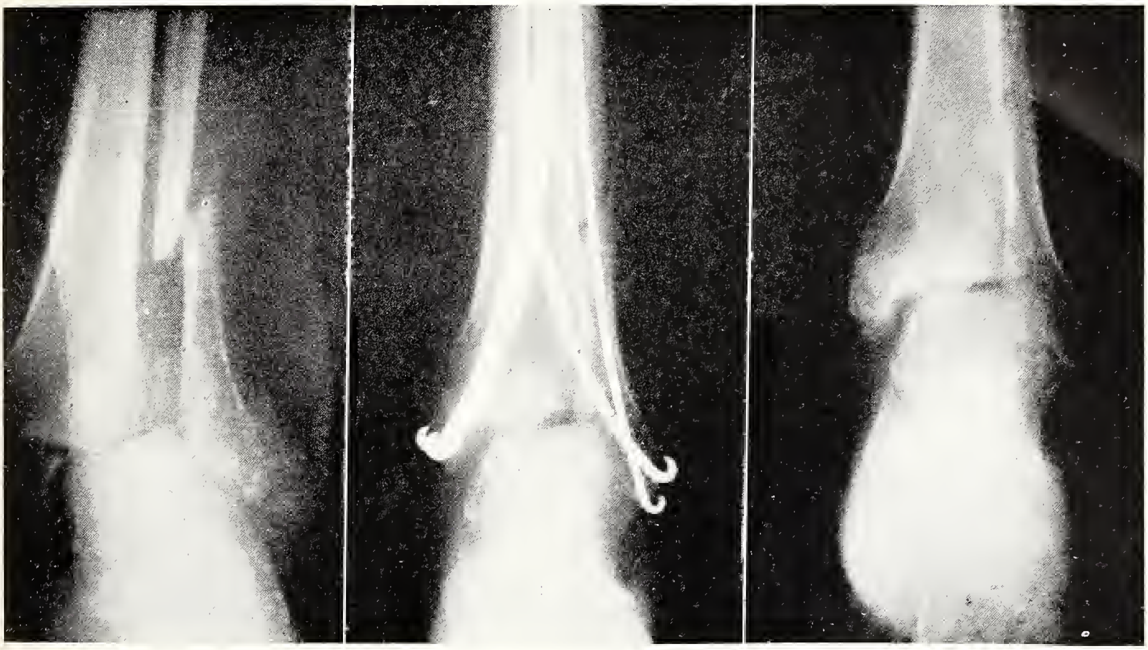
Fracture Problems

Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 24 of a Series

SUMMARY OF BASIC PINNING TECHNICS

Fracture Dislocation Ankle



Male age 35: Note that the tibio-fibulal ligaments have been torn with wide diastasis of the tibia and fibula. The foot has displaced laterally carrying with it the internal malleolus and the lower fibula fragment. The mortise joint has been destroyed.

Note also that in the postoperative film most of the pins are curved. They were straight when driven but were forced into curves by three-point pressure within the bone. The heads of all pins were stress-relieved with the bending iron. Two pins were used in the internal malleolus to assure stable fixation.

Order of pinning: Fix fibula first. The internal malleolus is then fixed and lastly the oblique pin is driven from the external malleolus into the tibia to compress the tibiofibulal joint.

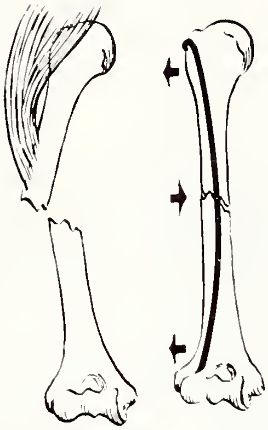
DISCUSSION: It is granted that a lot of "hardware" was placed in this ankle. But by what other method could a better result have been obtained? Small incisions were required and little bone trauma was produced. The ankle was immobilized with a KES dressing for ten days only. Partial weight-bearing began at two weeks and was increased until the patient returned to his job of welder at six weeks. It required a minor surgical procedure to remove the pins at 6 months.

How does one know to use straight pins or curved pins, single pin or multiple pins, or to stress-relieve the heads? This is best understood by a comparison of similar anatomical regions.

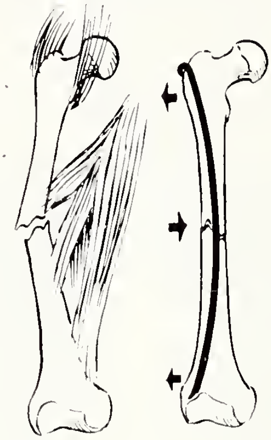
THE SINGLE PIN

Indicated in most simple shaft fractures when both fragments have substantial length.

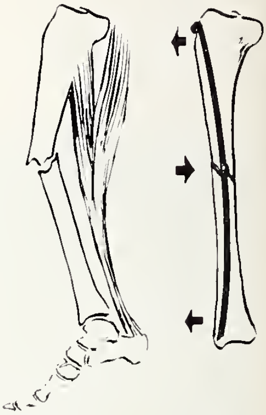
SINGLE CURVED PIN



Humerus Shaft

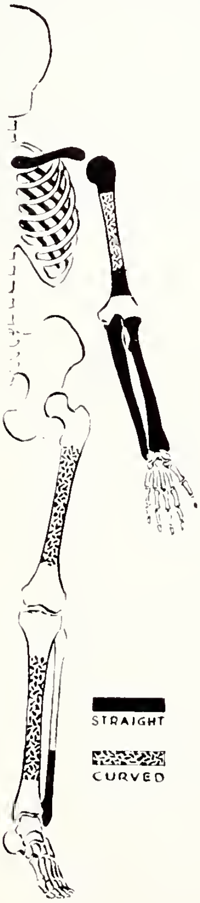


Femur Shaft



Tibia Shaft

Pin is always curved to resist deforming force of muscle pull. This opposition of forces is exerted at three points (arrows). Additional points of pressure, not here indicated, are exerted by the pressure of the resilient pin with each bone fragment.



SINGLE STRAIGHT PIN

CLAVICLE: Always straight. Rotation is not a factor here.

HUMERUS:

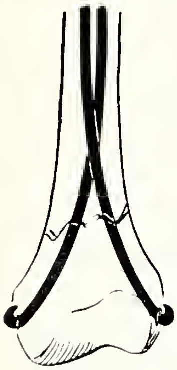
NECK: Straight. Pectoralis major pull produces 3-point pressure.

LOWER FOURTH: Straight to avoid angulation of lower fragment.

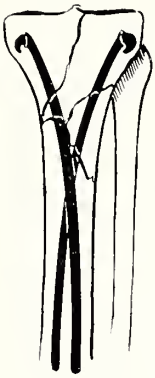
RADIUS: Straight. This tortuous bone lends itself well to stable dynamic fixation with little tendency to rotation.

ULNA: Straight. Upper half, tortuous like the radius, is easily stabilized. Lower half requires special care to avoid rotation and distraction.

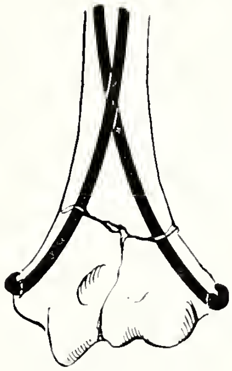
DOUBLE PINNING:
SIMILAR ANATOMICAL AREAS



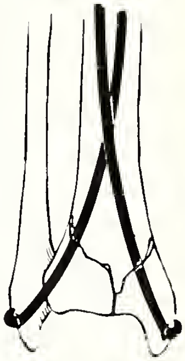
Lower Femur



Upper Tibia



Lower Humerus

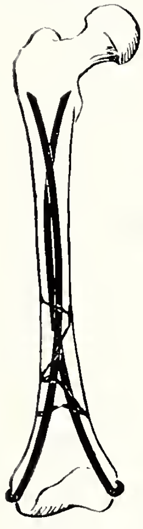


Ankle

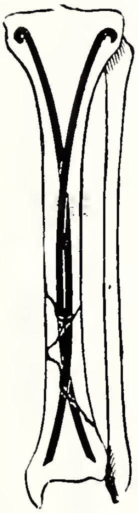
Note similarity of contours. Displacement problems and mechanics of fixation also similar.

COMMINUTED FRACTURES

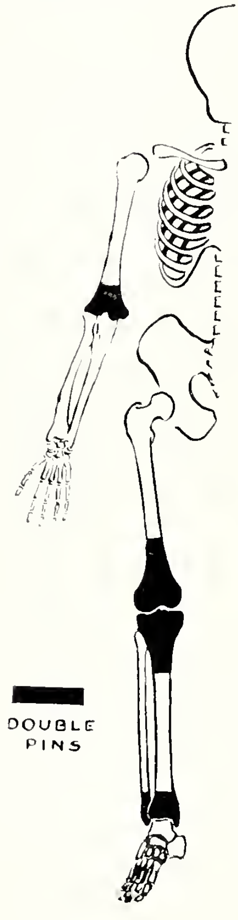
SIMILAR AREAS



Lower Femur



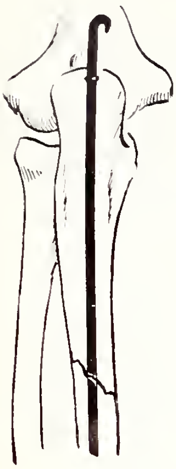
Lower Tibia



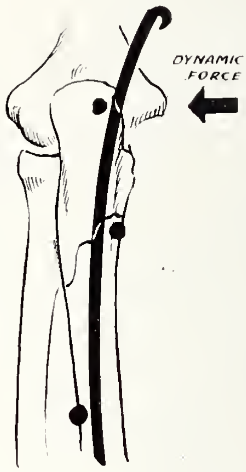
In both areas double pinning can frequently be done as a closed procedure. It is important to avoid an incision when possible because, with traction, the soft tissue envelope compresses fragments into good contact.

This technic maintains relatively good bone length.

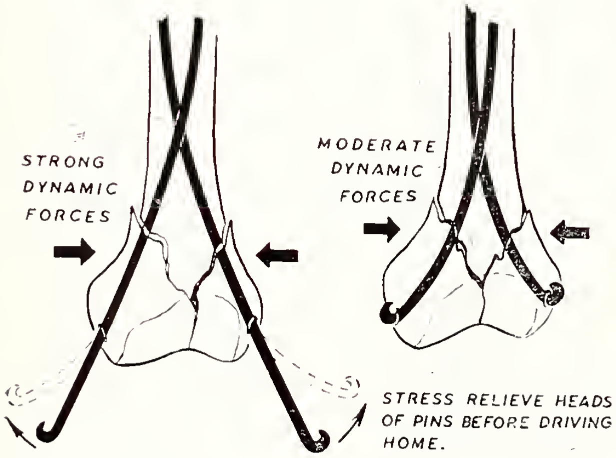
WHEN TO STRESS-RELIEVE THE HEADS OF PINS



If the pin is inserted through the end of a bone, stress relief is not indicated as the pin is exerting no dynamic force against the bone.



If the pin enters obliquely through the side of the bone, it is forced into a curve. Being resilient it continuously acts to straighten itself and this dynamic force is exerted at three primary points. As a result, if this force is great enough the head may sink into the bone.



STRESS RELIEVE HEADS OF PINS BEFORE DRIVING HOME.

Stress relief is most important in condylar fractures, especially in the osteoporotic bone of the aged. Here the heads could migrate into the bone to such degree that fixation is lost and the pins cannot be retrieved.

The Management of Otitis Externa*

J. W. McLAURIN, M. D.†
Baton Rouge, La.

THE FIRST ARTICLE to appear in the literature on the subject of otitis externa, by Mayer, in 1844, has the interesting distinction in being wrong in both of its main points. He said that the infection was on the universal basis of fungous infection, and he also said that the condition was of little or no importance.

Stirrings of dissent began to be evident before World War II, but it took the experiences of that conflict to overturn Mayer's ideas completely. A great many troops were stationed in the South and Southwest of the United States, and a great many from all parts of the country eventually reached the Pacific. In all of these areas, otitis externa is more or less endemic; it is a true saying that how an otologist views the disease depends upon the geographic location of his practice.

At any rate, the mass experience in the Pacific made it clear, as occasional observers had already begun to point out, that the great majority of all otitis externa is on a bacterial, not a fungous, basis. It was further learned, in a theater in which manpower was always in short supply, that while the disease is not lethal, it can result in the loss of a great many man-hours, not only on the part of those who are afflicted but on the part of the medical and technical personnel who care for them.

Physicians who returned with new concepts of the frequency and importance of otitis externa, as well as of its high nuisance value, retained their interest in the subject, and an enormous amount has been written on it in recent years; I plead guilty to a rather large output myself, and I am in the process of writing a monograph on it. In addition, most of the pharmaceutical houses developed a keen interest in the disease, and preparations guaranteed to cure infections of the external ear were offered on every hand.

I am thoroughly convinced, however, that specific therapy is not the solution of the problems of otitis externa. Certain drugs are useful in certain cases, but their usefulness varies from patient to patient, and the same drug is not always continuously effective in the same patient. I doubt that this situation will ever change, though I am quite sure that the popularity of the various preparations used in this condition will wax and wane; new preparations will be devised, but a universal panacea will never be discovered.

Let us, therefore, cut our coat to fit our cloth. Let us consider each patient, as an individual, and let us treat him on the basis of certain principles, which, I believe, are likely to endure. That is a policy I have employed myself for many years, and it is the policy we are teaching our students at Tulane. Certainly the results with this plan have been far better than they ever were under the old plan of disregarding the principles and treating our patients with a barrage of preparations of one sort or another. I therefore offer no excuses for saying over again what I have already said on many previous occasions, in my classes, in the hospital, at the Academy, and in medical meetings such as this one.

The Relief of Pain and Discomfort

The first of these principles, the relief of pain and discomfort, has a good deal of practical significance. Most of these patients have chronic or recurrent infections. They have grown accustomed to wet, itchy, stuffy ears and to some impairment of hearing as a result. They have been treated before. They have grown pessimistic about permanent relief, and they stay away from the physician until the ear flares up and becomes painful. Then they consult him, and they want prompt relief. If they do not secure it, they will go elsewhere, and the chance to treat the underlying infection will be lost.

In contradistinction, then, to the usual plan, we first treat the symptoms and later tackle the disease. We do not hesitate to give the patient whatever is necessary for relief. We usually suggest that he take 2 aspirin tablets. If relief does not follow in 20 or 25 minutes, we recommend codeine (gr. ½) or demerol (50 mg.). We even resort to morphine, as necessary, if repetition of the other drugs at 4-hour intervals proves ineffective.

We also recommend the application of dry heat, at first fairly close to the ear, later at a distance of 18 to 24 inches. Each application is for 15 or 20 minutes. Neither heat nor cold has any medicinal effect, but most patients find heat comforting.

When pain is very severe or intractable, x-ray therapy is employed. The radiologist applies 100 r through a small treatment cone, no larger than 2.5 cm. in diameter. The application is not repeated. We have found this a very useful method, but if the first treatment does not alleviate the pain, additional treatments will not help. It is true that the ear will tolerate 600 r without any damage to the secretory elements, and we originally used somewhat larger doses in some cases than the 100 r we now recommend. The results, however, were no better than with the smaller dosage.

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*Presented before the Section on Eye, Ear, Nose and Throat at the ninetieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 13-15, 1958.

†From the Department of Otolaryngology, Tulane University of Louisiana School of Medicine.

X-ray, like heat and cold, has no medicinal value whatsoever. It is simply an effective means of controlling pain.

Cleansing of the External Auditory Canal

No matter what form of therapy is employed, cleansing of the external auditory canal is a basic consideration. The procedure, to be effective, must be done thoroughly, and to do it thoroughly takes time and patience on the part of the patient, as well as the otologist.

We prefer manual cleansing, by tip suction and cotton wipes. Suction with the Frazier No. 1 tip usually removes most of the exudate in the membrano-cartilaginous and outer osseous portions of the canal. For the inner osseous portion, the attic area, and the area immediately adjacent to the tympanic membrane, we use a malleable attic aspirator which is small enough to be angulated necessary to enter all portions of the canal without trauma. When suction has been completed, the ear is gently wiped out with cotton wipes saturated with alcohol.

If the ear is too swollen and tender to permit cleansing by suction, we employ irrigations, including irrigations of tap water. Some observers still fear the introduction of fluids into the ear. We do not, though we take great care to be sure that the ear is left perfectly dry.

If the ear is so tender that it cannot be wiped dry, it is irrigated with 95 per cent alcohol (1 oz.) introduced from a 2-oz. DeVilbiss bottle by means of compressed air. Additional air is introduced after the alcohol is employed. This technique quickly removes any residual alcohol whose retention within the ear might cause pain. Any amount left after the use of the air is minimal and promptly evaporates.

If the ear is too swollen and edematous to permit cleansing by irrigation, a wick saturated with Burow's solution is inserted, and the patient is instructed to apply wet dressings saturated with the same solution every 3 or 4 hours. At the end of 24 hours, it is the exception not to find the edema and swelling so greatly reduced that the ear can be cleansed and the indicated therapy instituted at once.

Elimination of the Causative Agent

If these measures just described are properly employed, 75 per cent of all cases of otitis externa will be well on the way to correction with very little additional treatment. In fact, as Fabricant put it, the guiding plan in the management of otitis externa should be a maximum of inspection and a minimum of therapy. I firmly believe that if these patients could be seen daily, which, as a rule, is impossible, most of these infections could be cleared up merely by repeated daily cleansing. This practice may explain the good results obtained with some agents credited with cures that are simply beyond the bounds of reason.

Medication is applied by definite principles, as follows:

1. Only those specific agents are used to which the micro-organism present is known to be sensitive. The experienced otologist can usually tell from his clinical examination whether the infection is fungous or bacterial in origin, and, if it is bacterial, whether the causative micro-organism is gram-negative or gram-positive. The less experienced otologist must use cultural studies to determine these points.
2. The therapeutic agent used must be employed in sufficiently high concentration to be immediately effective.
3. The pH of the therapeutic agent must be on the acid side.
4. The therapeutic agent must be applied in sufficient quantity to cover the whole affected surface.
5. The therapeutic agent must be applied for a sufficient period of time at each application.
6. Consideration must be given to the vehicle in which the therapeutic agent is applied.
7. If the patient does not respond promptly to the treatment instituted, cultures should be made or repeated and sensitivity tests done.
8. The patient must be given written instructions to be certain that he will carry out the treatment prescribed without individual variations. As a practical matter, the patient must be allowed to carry out his own treatment, but at least every precaution should be taken to see that he does it correctly.
9. Topical applications and other active therapy must be discontinued as soon as possible, that is, as soon as the predominant causative microorganism has been brought under control and the underlying etiologic factors have also been eliminated.

The most frequent of these underlying causes is trauma. It introduces the original difficulties, and, when itching and discomfort occur, further trauma aggravates the original trouble. We insist that these patients keep their fingers and other objects out of their ears. Many of them say that they can control themselves during the day, but that they scratch and traumatize the ear at night. We suggest that they wear gloves to bed, and, if necessary, fasten the gloves with scotch tape, so that they cannot be pulled off. The mere covering of the fingers reduces trauma if it does not control it entirely.

Hydrocortone ointments are usually effective in controlling the itching. Some observers have also suggested that Sandostene be used; this is a proprietary preparation put out by the Sandoz Pharmaceutical Company. It is given in 50-mg. doses 4 times daily for 72 hours, after which the dose is reduced to 50 or 25 mg., depending upon the needs of the individual case.

In the occasional case, when the underlying cause of the infection is not clear, a biopsy may be useful. We have seldom found it necessary and certainly do not recommend it until all other possibilities have been exhausted.

Special Routines

Let us consider a patient who comes to the office in acute distress, with a swollen, weeping ear, the site of a diffuse eczematoid infection. What shall we do for him? First, we recommend remedies to relieve his pain. Then we attempt to cleanse the ear, carrying out our routine as well as possible and getting the ear as dry as possible, after which we insert a cotton wick soaked in Burow's solution. We tell the patient to apply wet dressings of the same solution for 15 or 20 minutes at a time during the next 24 hours, 3 or 4 times in the course of the day, and perhaps once more at night.

When we see the patient the next day, the swelling has usually subsided; we continue the cleansing routine, and, if the ear is cleared up to our satisfaction, we proceed with the therapeutic regimen. If it is still swollen, we continue the Burow's solution and wet dressings for another 24 hours.

Meantime, we have taken a culture, and by history and clinical observation we have decided the type of infection present and the type of medication necessary. A patch test is done, to be certain there is no possibility of sensitivity to the drugs to be used. In all patch tests, we use the contralateral post-auricular and upper cervical regions. By the time the sensitivity report is ready, the swelling and weeping are both under control. In this type of case, the medication of choice will probably be used in the form of a 4:1 boric acid powder, with which the ear is dusted.

The greatly swollen ear in which furunculosis is present is probably a staphylococcic infection. Treatment consists of intramuscular penicillin in large doses. The first dose is 1,000,000 units, followed by injections of 400,000 units every day for five or six days, regardless of whatever improvement may be evident. Unless a full course of injections is given, furunculosis is likely to recur. In the meantime, the ear is kept cleansed, and a wick inserted, impregnated with iodex ointment. Almost any ointment is satisfactory, but we have used iodex ointment for a number of years because it is miscible and readily applied to the wick. The wick probably has some medicinal value, but its greatest usefulness is to splint the ear canal and thus help to reduce pain.

As a general rule, as time has passed, we have come to rely more and more on cleansing the canal thoroughly and dusting it with the antibiotic or chemotherapeutic agent of choice in the particular case in the form of four parts of the agent to one of boric acid.

Sedation

Anxiety or emotional tension is the predisposing or underlying cause in certain cases of otitis externa which take the form of atopic dermatitis, urticaria, eczema, neurodermatitis and similar conditions. In this type of case some use of sedation should be considered.

In the past, we used sedative drugs because they were all that were available. They were sometimes of benefit, but they were often associated with side effects such as skin eruptions and mental depression.

At the present time, we use one or another of the tranquilizing drugs. Atarax (hydroxyzine hydrochloride) is extremely beneficial in dosages of 10 to 25 mg. three to four times daily. We also use Equanil or Miltown (meprobamate) in dosages of about 200 mg. four times daily, as necessary.

There are few side reactions, or none, with these drugs, and they seem of benefit in controlling lesions on the basis of anxiety or emotional tension. I would like to caution you, however, not to substitute pills for the old-fashioned family-doctor type of therapy. Psychotherapy of this kind is often extremely useful in these particular cases of otitis externa.

Prophylaxis of Recurrent Infection

In the past, attempts to prevent recurrences of otitis externa have been disappointing. For the last three years, however, we have been using, with considerably more satisfactory results, a preparation called silicone 200 fluid (500 viscosity) put out by the Dow Corning Chemical Company. The pH is neutral or slightly acid, and studies showed that it was not irritating to the conjunctiva of the rabbit, or to the bladder when it was used in the form of an irrigation.

We prescribe it only when the ear is entirely free from infection. Then its use is recommended every third day when the ear is likely to be exposed to moisture. In the 165 closely supervised cases of otitis externa in which we have used this preparation, there have been no instances of sensitivity to the preparation or any other side reaction, there has been no instance of hearing impairment, and there has also been no instance of recurrence of the otitis externa.

Summary

Otitis externa is a widespread, troublesome disease, in which each patient must be treated on an individual basis while at the same time certain general principles of management are followed. It is particularly important that specific therapy be applied according to precise principles. The best results are obtained if treatment is confined to a few agents selected because of their antibacterial or fungicidal effects, if these drugs are employed for as brief a time as the necessities of the case permit, and if their use is supplemented by thorough cleansing of the external auditory canal and by measures for the relief of discomfort.

Prison Medicine*

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I shall attempt to point out some of the problems in the practice of prison medicine that differ from the general practice of medicine outside. The techniques used, the diseases treated, and the results obtained are, of course, in general, the same as are encountered in any group of patients outside this institution. This practice differs somewhat in that we are dealing with a group of people who are, in most instances, maladjusted, neurotic, and in some instances, frankly psychotic. We also have more than our share of constitutional psychopathic inferiors. My remarks will be confined to the practice of prison medicine in the Mississippi State Penitentiary, even though the same general problems are encountered and the same types of people must be dealt with in any institution of this sort.

We operate a 65-bed hospital and have a staff of two physicians, one dentist, three nurses, a dietitian, and a laboratory and x-ray technician. All other hospital workers are drawn from the inmates. We are charged with the medical care of approximately 2100 prisoners and over 500 employees and their families, and do a glorified type of general practice, including obstetrics and pediatrics. We do our own surgery and have the privilege of consultation and referral to the University Hospital of unusual cases that cannot be cared for in our hospital, of psychiatric consultation and treatment of patients by the Whitfield staff, and the services of the State Health Department are available to us.

There are a number of differences in this practice and the general practice of medicine outside, or even other institutional practices, in that we are dealing with a group of people who are not quite normal and in many respects will not cooperate in either diagnosis or treatment. One of our problems in this institution is malingering. Malingerers vary widely in types and degree, from the feigned headache or backache to inflicting severe injury upon their person, chiefly for the purpose of escaping work. To state definitely that a man does not have a headache, or in some instances, a backache, is not possible, and careful evaluation of the case must be made after the usual methods to determine the causes of these complaints are exhausted. True backache may be determined by physical examination, muscular spasm, or the reflex movement of the patient to sudden aggravation of the pain. Hemoptysis, hematemesis, hematuria, melena are often complained of, however, the lab and x-ray as well as physical examination will often either confirm or rule out these complaints. Occasionally a patient has read up or been coached on feigning a specific complaint and presents a challenge to the physician. Coronary heart disease, especially angina pectoris, is one of the more common complaints presented by the more intelligent malingerers. The electrocardiogram with the two-step exercise examination will usually reveal any coronary insufficiency. The more severe type of malingering jecting foreign material into the joint spaces. This includes severing of the Achilles tendon and ingroup is much more difficult to deal with. Contact with blister bugs is also a problem. The prisoner catches the beetles and rubs them over his hands, body, and even his face, so as to cause large blisters. Foreign proteins are injected subcutaneously in order to produce elevated temperatures, and laundry soap is often eaten and will cause severe gastroenteritis. The prison physician must continually be on the alert for these malingerers in order to prevent them, since if one malingerer is successful he may expect a spread of this same complaint. Another of the differences in this practice and that of the outside general practice is that we have a great many more psychosomatic illnesses than are encountered outside. We have a high percentage of patients with hypertension, stomach ulcers, migraine-type headaches, and pernicious vomiting. We also have a great number of accident prone individuals. The prison physician must use a sympathetic approach to these problems as well as the necessary medical care. We receive a great many drug addicts, and have found that where possible the abrupt withdrawal treatment is by far the more satisfactory method; however, these patients must be watched closely for any signs of beginning circulatory collapse, and if such is noted, it is necessary to withdraw the drug more gradually. The health of the average inmate is much better than that of the average patient outside. Regular habits and outdoor work along with balanced nutrition, I feel, contribute markedly to this.

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*Read before the 68th semi-annual meeting of the Delta Medical Society, October 9, 1957, Cleveland, Miss.

Preventive medicine is also taken advantage of to the greatest degree, especially in the chest x-ray surveys and immunization of inmates against infectious diseases. Physical examination, Wassermann, routine lab work on all new inmates, and inspection of the food handling departments and water supply of the institution come under the care of the prison physician. Homosexuality, while present, in our institution is not nearly as prevalent as in institutions where the inmates are more closely confined and female contact completely denied.

Another phase of the prison physician's work is that of treating the inmates of Death Row and witnessing the executions. While this is not a pleasant task, we feel that we are able to afford these patients some comfort during a trying ordeal.

In conclusion, the prison physician should do his best in all fields of medicine and be of a rather understanding nature, retaining his equanimity at all times, keeping in mind when he begins to developed a hardened attitude toward prisoners that "there but for the grace of God go I."

DISCUSSION

John G. Egger, M. D. (Drew)—The subject just discussed by Dr. Robinson of the Mississippi State Penitentiary is certainly a multiple-faceted problem—as he terms it, "a glorified type of general practice." In reality, it is unadulterated, pure socialized or state medicine.

Since 1902 the old original system of medical care at Parchman has remained unchanged except for the addition of one physician and a new hospital to care for the 2100 inmates, 500 employees and their families. The patients here have the perfect security of socialized medicine, in all its glory, with no financial obligations, bills, taxes, etc.

Employees enjoyed the benefits of this free medical care until they began to abuse it by expecting free medical care for visiting relatives and friends. This abuse has been stopped, and now only employees and their immediate families are eligible for free therapy.

In most other state-operated institutions employees do not receive these "socialized medicine" privileges and must pay their own medical bills to the physician or clinic of their choice.

Dr. Robinson is to be congratulated for the fine job which he has done and is doing now at Parchman.

> God give us the fortitude to endure the things which can not be changed, and the courage to change the things which should be changed, and the wisdom to know one from the other.
>
> —*Bishop Oliver J. Hart*

Reflux Esophagitis*

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REFLUX ESOPHAGITIS

REFLUX ESOPHAGITIS is the most common disease affecting the esophagus[1]. It is our purpose to review the basic aspects of this disease and to provide an over-all picture of its manifestations based on our clinical experience. The 30 cases which provide the basis for this report were diagnosed by means of esophagoscopy. No individual was included in this series who had not been subjected to endoscopy. These cases were encountered in 193 consecutive esophagoscopies.

TABLE I
ETIOLOGY AND DISTRIBUTION OF CASES

- A. Inherent incompetency of barrier
  - 1. Permanent
    - (a) Chalasia — 6 cases
  - 2. Temporary
    - (a) Pregnancy — 2 cases
    - (b) Prolonged bed confinement — 1 case
- B. Acquired incompetency of barrier
  - 1. Hiatus Hernia — 19 cases
  - 2. Short esophagus with thoracic stomach — 1 case
- C. Iatrogenic incompetency of barrier
  - 1. Nasogastric suction — 2 cases
  - 2. Postoperative
    - (a) Plastic esophagogastric procedures — 2 cases
    - (b) Unsuccessful hiatus hernia repair — 2 cases
    - (c) Partial gastrectomy — 3 cases
    - (d) Total gastrectomy — 1 case

As indicated in Table 1, the bulk consisted of individuals with hiatus hernia and secondary esophagitis, with a scattering of patients among the other various categories. We do not feel that this series is of sufficient size to permit any significant statistical analysis regarding the relative importance of the various etiological backgrounds. The fact that a highly selective group of patients were examined by endoscopy, of itself invalidates any accurate estimate of the over-all incidence of esophagitis among the population as a whole. This report, then, is concerned with a broad clinical approach to the problem.

ANATOMY AND PHYSIOLOGY OF THE DISTAL ESOPHAGUS

A proper understanding of reflux esophagitis, must necessarily be based on a proper knowledge of the anatomy and function of this organ, most particularly as applied to its distal portion.

The phreno-esophageal elastic membrane inserts into the wall of the esophagus some 2 or 3 cm. proximal to the diaphragmatic hiatus, anchoring it to this structure. The narrowing produced by this membranous insertion is considered by some observers to represent the inferior esophageal sphincter[2,3]. The portion of the esophagus lying distal to this "sphincter," some 2-3 cm. in length has been termed the esophageal vestibule[2,3,4] and is limited distally and closed by a second sphincter, according to Lerche, the constrictor cardiae[2]. It has been stated that the esophageal vestibule maintains a motor function independent of the main body of the esophagus, with the normal esophageal peristalic wave halting at the inferior sphincter without involving the vestibule[4,5,6].

The investigations of Dr. Earl Fyke[7] have conclusively demonstrated, however, that these earlier theories are inaccurate, and that the terminal 2-3 cm. of the esophagus acts as a sphincter of itself. This region remains tonically contracted until swallowing takes place, with sphincteric relaxation developing within two seconds following deglutition, while the primary peristaltic wave is still high in the esophagus. Relaxation is maintained until the contraction passes through this region in a true peristaltic fashion, following which, the sphincter again becomes tonically contracted. This mechanism is apparently weak at best, and seems to depend upon positioning of the esophagogastric junction at or below the diaphragmatic hiatus to prevent gastroesophageal reflux from occurring.

Under normal conditions, gastroesophageal reflux is prevented by a number of factors:[1,8,9,10,11]: 1. Inferior esophageal sphincter. 2. Constrictor cardiae (it is not conclusively proved that this actually exists). 3. Mucous membrane barrier (the linear esophageal folds impinge upon the transverse gastric folds). 4. Obliquity of the esophagogastric junction (the acute angle of the junction is made even more acute by distention of the fundus of the stomach. This prevents reflux even with postmortem separation of the stomach and esophagus from the diaphragm). 5. Pinchcock effect of fibers from the oblique musculature of the stomach looping about the distal esophagus. 6. Sling effect of the right crus of the diaphragm passing about the distal esophagus, inserting into the central tendon of the diaphragm. 7. Snugging effect of the phreno-esophageal ligament. 8. Tethering effect of the left gastric artery.

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†From the University of Mississippi School of Medicine, the Veterans Administration Hospital, and the Posey-Stephenson-Fyke Clinic.

These various components maintain an effective barrier to reflux either by presenting a blockage to the retrograde flow of gastric content or by maintaining the proper angle and relationship of the esophagogastric junction to the diaphragmatic hiatus. (Fig. 1)

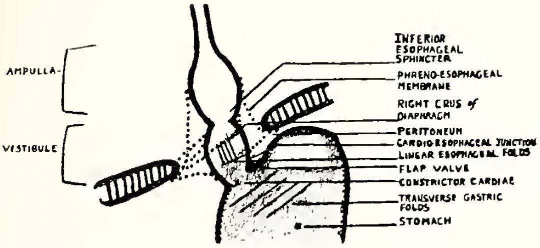

Fig. 1. Diagrammatic representation of the distal esophagus and the esophagogastric junction, showing various components of the barrier mechanism.

It is now known that the esophageal mucosa may be composed to a considerable extent by a gastric type of epithelium, rather than by pure squamous type cells[12],[13],[14]. The percentage of individuals possessing such an esophageal mucosa is not established, but it is stated that severe esophagitis and peptic ulcer of the esophagus are more commonly seen in this group[15]. Although some protection to the esophagus is afforded by saliva and by the protective mucus secreted by the esophageal glands, situated through its length, and the cardiac glands located in the proximal and distal portions of the organ[9], the mucosa is quite vulnerable to the onslaught of gastrointestinal secretions and particularly to reflux which occurs in predisposed individuals. Alkaline intestinal juices and bile may produce damage in the face of an achlorhydria[16],[17]. The mucosa is most severely damaged, however, by acid peptic juice from the stomach[9],[16],[17]. In view of the inadequacy of the intrinsic protection mechanism, the importance of an adequate reflux barrier is thus more clearly brought into focus.

It should be clearly understood that gastric reflux may occur in normal individuals and that it does not invariably induce mucosal damage[9],[11], just as not all individuals with hyperchlorhydria develop duodenal ulceration. The problem of esophagitis is far from solved. Palmer[18] has demonstrated that esophagitis may be present in the submucosa, being demonstrable only by biopsy, without visible endoscopic pathology, and further that it may regress and recur without apparent reason, thus exhibiting the type of behavior commonly encountered in duodenal ulcer. For want of better understanding "tissue susceptibility" is postulated once esophagitis develops.

ESOPHAGEAL PAIN

Although the anatomical pathways over which esophageal pain is carried have not been clearly delineated, the experiments of Kramer and Hollander[19] indicate that the posterior roots of at least the upper five thoracic nerves provide sensory innervation to the organ. This corresponds to the neural pathways over which cardiac pain is carried. Hence esophageal and cardiac distress are perceived in similar locations, making differential diagnosis between the two very difficult at times. Well documented reports[8],[19],[20],[31] have confirmed that in individuals with angina, induction of esophageal distress produces pain indistinguishable in any respect from that arising from the heart. Experimentally, esophageal pain is most easily produced by distending a balloon at the desired level. Pain may also be induced in predisposed individuals by the drinking of dilute hydrochloric acid, but not by alkaline solutions. Acid-caused pain is promptly relieved by soda-water[19]. Esophageal pain is felt as burning, boring, pressing, fulness, or "bursting" in the retrosternal region, interscapular area, jaws, teeth and arms.

ETIOLOGY

No effort is made in this discussion to cover the various esophagitides aside from the types associated with reflux.

By definition, we are dealing with esophagitis due to a loss of or incompetency of the esophagogastric barrier which permits gastroesophageal reflux to take place. One could theoretically encounter such a state in a variety of conditions. From a practical point of view, derived from our experience with the disorder, the etiological classification shown in Table 1 suffices.

The common quality in each of the factors listed is that of permissive gastroesophageal reflux, the *sine qua non* of esophagitis. In chalasia there is an innate failure of gastroesophageal competence with an essential absence of any barrier effect, free regurgitation and esophagitis resulting[9],[11],[21]. This condition is being recognized with increasing frequency among infants[36] but can apparently remain asymptomatic or develop *de novo* after adulthood is reached. Pregnancy with the attendant increase in intra-abdominal pressure, causes an imbalance in the normal gradient between esophagus and stomach, thus favoring reflux. Pregnancy is also a common cause of hiatus hernia and secondary esophagitis[23]. Vomiting of pregnancy accentuates these changes and tends to accentuate the esophagitis. The debilitation of prolonged illness and bed confinement with general decrement of muscle tone causes a failure of barrier competency and permits regurgitation to occur. A recumbent position favors poor esophageal drainage in such individuals and permits gastrointestinal secretions to pour back into the esophageal lumen without impediment. It is a distressingly simple matter for a severe esophagitis to be thus produced.

Hiatus hernia is probably the most common cause of esophagitis[21], due to the cephalad displacement of the esophagogastric junction, with resultant failure of sphincteric adequacy. This problem has been dealt with at length by us in recent publications[21],[29] and will not be further elaborated upon here. There is now considerable question that the congenitally short esophagus with thoracic stomach ever exists in pure form. Rather, there is a large body of evidence that the phenomenon is the result of a pre-existent chalasia or hiatus hernia producing a severe esophagitis; longitudinal esophageal muscular contraction then displaces the stomach into the thorax, hence the "short esophagus with thoracic stomach"[11],[22].

Man-made esophagitis is an unfortunate, but not always avoidable complication. The presence of a Miller-Abbott tube or prolonged nasogastric suction for any reason invariably produces at least mild mechanical mucosal irritation in the esophagus. In occasional patients, leakage of gastric contents around the tube into the esophagus with prolonged contact between the peptic secretions the mucosa, due to the recumbent position, is sufficient to initiate a bona fide esophagitis with persistence into the recovery phase and prolonged periods of symptomatic distress[15]. One of the great failures of current surgical approaches to the esophagogastric junction for ulcer, neoplasm, and achalasia has been a loss of the barrier efficiency with a resultant esophagitis[25]. An operation recently described from the Mayo Clinic, based on results of Dr. Earl Fyke's studies on the barrier mechanism, offers a real break-through in the attack on achalasia[26]. Defects in techniques related to other distal esophageal disorders may be expected to follow apace. Esophagojejunostomy following gastrectomy permits regurgitation of alkaline biliary and intestinal secretions because of extirpation of the esophagocardial mechanism. As stated earlier, the mucosa is damaged by the presence of these juices, although the vulnerability is less than to acid peptic juice. The resultant inflammation may be surprisingly severe[30]. Unsuccessful attempts to repair hiatal hernias have the sequelae of hernia recurrence with secondary esophagitis and/or further impairment of the barrier mechanism with free regurgitation and subsequent mucosal damage.

The etiological background of the two instances of esophagitis encountered within six months of subtotal gastrectomy remains obscure. It is illogical to rationalize that removal of the distal portion of the gastric pouch could impair the barrier mechanism and allow esophagitis to develop. Neither patient had esophagitic symptoms prior to the resection nor during a four-month immediate postoperative interval. One would conclude that the esophagitis was caused in some way by the surgery. Whether the nasogastric suction following the operation was remotely responsible, whether the surgery itself produced the disease by some as yet unknown mechanism or whether some other unrecognized factor was responsible cannot be stated with conviction.

PATHOPHYSIOLOGY

Once reflux is permitted, due to any of the previously discussed abnormalities, the esophagus, particularly its distal portion, is subjected to the irritating and corroding effects of gastrointestinal secretions, against which the inherent defenses of the esophageal mucosa are inadequate. The recumbent position particularly favors the backwash from stomach to food pipe, as does any factor increasing intra-abdominal pressure. The major damage transpires therefore at night, and is proportional to the amount of reflux taking place.

The mucosal irritation that develops depends to a certain extent on the type of mucosa being affected: whether it be squamous, gastric, or comprised of interdigitating islands of gastric and squamous cells. For purposes of brevity, let it suffice to state that the most intense reaction and most marked stricturing takes place in the "gastric" lined esophagus; where the mucosa is of the squamous type, the reaction is of least intensity, the stricturing least marked, but the esophagitis tends to involve the longest segments; the "mixed type" of mucosa reacts between the two extremes[15]. Once the esophagitis is established, there is ultimately some contracture of the longitudinal muscle fibers of the food pipe, with the result that the tube becomes shorter, and in so doing, displaces the esophagogastric junction cephalad, thus producing a hiatus hernia. This is not seen in every case by any means, but is potentially present always. Hernia development permits additional reflux to take place, thus tending to perpetuate and advance the esophagitis. Circular muscle spasm and scarring combine to narrow the lumen, ultimately culminating in stenosis, which may produce complete obstruction[1,10,12,15,27,28,29]. Dysphagia is produced not only by the mechanical effects of the scarring and stricturing, but by abnormal esophageal motor function secondary to the esophagitis[24,28,31,32]. This abnormal motility engenders difficult deglutition by disruption of proper peristaltic propulsion. Additional phenomena arising from abnormal motility include episodic aphagia[8] (sudden onset of severe distal esophageal pain and inability to swallow appearing soon after starting a meal, persisting only a few moments, with gradual subsidence of symptoms followed by normal deglutition) and cricopharyngeal achalasia[33] (inability to initiate swallowing, with pain high in the esophagus. Swallowing may be performed only by hyperextension of the neck and jutting forward of the lower jaw).

Stenosis produces gradually progressive dysphagia, with the ever-present danger of esophageal obstruction from the impaction of an improperly masticated bolus (usually meat) in the area of narrowing.

Esophageal peptic ulceration may ultimately eventuate in the "gastric" lined tube, producing one of the most difficult problems in medicine for symptomatic relief and cure[12,14,15]. Bleeding and perforation are late and particularly grave complications.

SYMPTOMS

Retrosternal burning distress is the most common manifestation of esophagitis. It commonly appears shortly following a meal and is typically relieved by antacids. The distress has a characteristic tendency to radiate straight through to the back in the interscapular area. It often appears at night in association with "water-brash," or regurgitation; relief is achieved by assuming the erect position and the ingestion of antacids. The discomfort is also apt to occur with postures which increase intra-abdominal pressure, such as tying one's shoelaces, lifting or stooping. Nausea, usually unassociated with emesis is particularly common in esophagitis, and may be of sufficient severity to present as the chief complaint. Dysphagia of varying degrees, which may come and go at erratic intervals, or which may be steadily progressive, post-prandial regurgitation, flatulence and belching (usually due to aerophagia), weight loss, and sitophobia are frequently encountered. It should be fully realized that the pain may exactly mimic coronary distress in all regards with the exception that it is apt to appear either post-prandially, nocturnally, or with maneuvers which increase intra-abdominal pressure. In these aspects, it may also be paralleled by angina. Esophagitic pain does not, of course, come with exertion. The patients we have seen with both angina and esophagitis have not been able subjectively to differentiate the distress from either source. Bleeding and perforation are late manifestations and are almost invariably preceded by long periods of typical esophagitis symptoms. Hypochromic anemia secondary to mild, chronic blood loss may be encountered.

DIAGNOSIS

A carefully taken history is the keystone to diagnostic accuracy. There is no physical finding which would lead one to the disease. It is therefore important to keep the possibility of esophagitis in mind in any individual with distress in the anterior chest, interscapular region, or upper abdomen.

X-rays of the esophagus and stomach may be of considerable value. The presence of a hiatus hernia or free gastroesophageal reflux provides presumptive information. Additional evidence is afforded by the presence of localized esophageal narrowing, with fuzziness of outline, incomplete distensibility, and mucosal irregularities, without the complete fixation and regular reproduction found in carcinoma[31].

The diagnosis can be established with complete accuracy only by means of esophagoscopy, preferably with biopsy of the involved area. The development of the flexible-tipped esophagoscope has rendered examination of the food pipe far less hazardous than in the past, and does not require general anesthesia for its performance. The technique employed is identical to that used in gastroscopy; indeed, we commonly carry out the two studies as part of the same examination. Since the patient is conscious, but sedated, he is able on command to take deep breaths, perform the Valsalva maneuver and other movements helpful in determining the pliability of the esophageal walls and the presence of reflux. In esophagitis, the mucosa is hyperemic, edematous, friable, and presents pinpoint submucosal hemorrhages. Erosions, commonly longitudinal, are common. Occasionally, frank ulceration is encountered. Stricturing is self-evident. Biopsy is of considerable value not only in establishing beyond doubt the presence of esophagitis, since the disease may present in the submucosa without visible endoscopic abnormality[18], but also to determine the type of mucosa. Unsuspected carcinoma may exceptionally be brought to light by this means. Esophagoscopy is strongly urged in every case of suspected esophagitis or dysphagia of unknown origin.

THERAPEUTIC MEASURES

A conservative approach is indicated in the vast majority of instances, particularly in the early stages of the disease and in individuals who have not advanced complications such as stenosis or esophageal ulceration. The earlier the diagnosis is established, the better the therapeutic results. The bulk of patients can be satisfactorily controlled by a combination of medical and mechanical measures.

It is imperative to emphasize to the patient the necessity for full cooperation and rigid adherence to the program outlined. Failure to comply will make further advancement of the disease more certain and disabling complications more likely. Although individualization is essential, the following encompasses the needs of most patients:

1. Diet: An ulcer-type dietary, with avoidance of thermally hot or cold foods, condiments, and coarse edibles, should be varied in strictness with the intensity of the disease. Avoidance of overeating should be stressed to minimize postprandial reflux. Food should be eaten slowly and thoroughly masticated. Lying down immediately after meals should be discouraged.

2. Medication: Gastric acidity should be neutralized by antacid preparations taken every two hours while awake, and whenever nocturnal distress appears. Anticholinergics are employed four times daily as in standard ulcer therapy. As a word of caution, it is wise to be certain that the preparation employed does not induce esophagospasm. Topical anesthetics have been disappointing in practice, although in theory they should be of considerable benefit. If there is no discernible amelioration of symptoms following their administration, the physician should discontinue their use.

3. Avoidance of increased Intra-abdominal Pressure: Obesity, when present, should be eliminated by caloric restriction. The wearing of tight belts and corsets is discouraged; men should resort to suspenders. Avoidance of postures and physical maneuvers which tend to increase pressure within the abdomen should be interdicted. Constipation and straining at stool should be corrected by suitable control of bowel habits.

4. Minimizing of nocturnal reflux: The head of the bed should be elevated 10-12 inches, allowing gravity to keep the esophagus drained clear of gastrointestinal secretions at night. This is of extreme importance. It should be made clear to the patient that propping up on pillows will in no way suffice, and that the flexion of the body thereby produced is actually deleterious; the head of the bed itself must be elevated. Bedtime snacks should be omitted.

5. Relief of motor dysfunction and mild degrees of stenosis: Esophageal dilatations afford considerable relief as well as benefit in those instances where advanced changes have not ensued. Employment of the Hurst bougie suffices in most cases. The frequency of dilatation depends entirely on the response, the interval varying from monthly to two or three times weekly. Once the symptoms are under control, we commonly teach the patient to pass his own bougie so that he may continue his treatments at home as needed.

6. Surgical intervention is most frequently employed in instances of hiatus hernia with resistant esophagitis, but in our experience has not proved uniformly successful. Of 19 cases repaired within the past three years, four have already recurred and two cases demonstrate free reflux. In the other types of esophagitis, partial gastrectomy with vagotomy is commonly employed, but again, is lacking in total efficacy. More elaborate procedures such as esophageal resection, and esophagojejunostomy, have been advocated for severe peptic esophagitis, esophageal ulceration, bleeding, and marked stricturing. Although it is tempting, in a difficult case, slowly or imperceptibly responding to conservatism, to advocate an operative assault, one should continually keep in mind that with the exception of hiatus hernia, postoperative results leave something to be desired; postoperative recurrences are very difficult to treat. If at all possible, it is best to limit surgery to severe resistant cases, marked stricturing, bleeding, and perforation.

THERAPEUTIC RESULTS

It is unfortunate that the present series is sharply weighed against a report favorable to conservatism. This is due to the fact that of the 19 patients having hiatus hernia with secondary esophagitis, 17 had rather severe, far advanced disease at the time of esophagoscopy, a situation which, in the case of hiatus hernia, carries a poor outlook as far as non-operative treatment is concerned. Seventeen of these 19 patients have undergone surgery; as previously stated, four have experienced recurrences of their hernia, and two have demonstrable free reflux—and this in an interval of less than four years for the longest follow-up!

Since this paper deals with such a highly selected group of cases, one can draw no statistical analysis or firm conclusions relative to the various sub-classes. We have encountered no total failure in any group other than that associated with hiatus hernia. Each failure was far advanced when first seen. Every case diagnosed prior to development of severe disease has benefited by conservation. Response has been excellent in five of the six cases of chalasia, the two cases of pregnancy, the two cases following nasogastric suction and two of the three cases following partial gastrectomy. Results were classified as good in two of the cases due to hiatus hernia, the two cases following unsuccessful hernia repair, and one case of chalasia. Poor results were obtained in the remainder. Surgery has not been thus far employed in any of the group other than those referred to above with hiatus hernia.

CASE REPORTS

No effort will be made in this report to present an exhaustive survey of our cases or to make of this a statistical study. Our intention is briefly to present certain selected case summaries illustrating the various faces of esophagitis.

CASE 1.

Esophagitis due to chalasia presenting as chest pain: A 42-year-old white male for 8 months had suffered from paroxysmal attacks of retrosternal pain radiating into his neck, left arm, and back. The attacks came after eating, particularly if he rested on the bed immediately postprandially, during the night, and occasionally when he bent over to tie his shoelaces. Exertion had no provocative effect. It was the patient's opinion, as well as that of the referring physician, that the symptoms represented anginal episodes. The physical examination, routine laboratory work, chest x-ray and Master electrocardiographic tests were entirely unremarkable. Roentgen studies of the upper gastrointestinal tract were normal except for a patulous cardia. Reflux could be demonstrated at fluoroscopy. Esophagoscopy revealed the mucosa of distal 3 cm. of the food pipe to be intensely hyperemic and edematous, with several erosions being present. The esophagogastric junction remained wide open constantly. Gastric content frequently regurgitated. Pressure on the inflamed area by the tip of the scope reproduced the distress experienced by the patient. He became symptom-free on the previously described conservative program.

CASE 2

Esophagitis due to hiatus hernia presenting as "nervous indigestion": A 51-year-old male had for two years suffered from intense postprandial heartburn and flatulence with belching. The symptoms occasionally occurred during the night. There had been for three months gradually increasing dysphagia. He had consulted several physicians who, because of negative studies, had attributed the complaints to tension. The patient had indeed become extremely nervous, anxious, and irritable as the symptoms had progressed. His physical examination, routine laboratory studies, chest x-ray and electrocardiogram were within normal limits. Upper gastrointestinal x-rays made in the Trendelenberg position with execution of the Valsalva maneuver revealed a large sliding hiatus hernia and free reflux. Esophagoscopy disclosed an intense inflammatory reaction involving the distal esophagus. Free reflux was present. Due to the severity of the reaction, surgery was advised. An Allison type of repair was performed by a well qualified thoracic surgeon. The patient became asymptomatic in all respects following the procedure for a period of three years. At this time he returned, complaining of heartburn. No hernia recurrence could be demonstrated, but markedly free gastroesophageal reflux and erosive esophagitis had recurred due to esophagogastric barrier incompetence. Conservatism has been employed with good results.

CASE 3.

Esophagitis following gastric resection: A 39-year-old female had undergone subtotal gastric resection for a bleeding duodenal ulcer 24 months prior to examination. Vagotomy had been performed due to recurrent upper gastrointestinal hemorrhage of undetermined origin six months before. She was referred for gastroscopy because of continuous high epigastric and low retrosternal burning pain, referred into the back, intense nausea, and frequent emesis, and recurrent moderate dysphagia. Her physical examination, and laboratory studies, were essentially normal. The gastrointestinal x-rays were reported as revealing a normal postoperative stomach. It was our feeling, however, that there was roentgen evidence of esophagitis present. (Fig. 2) Esophagoscopy was therefore performed as part of the gastroscopic procedure. The distal 16 cm. of the esophagus presented an intense inflammatory reaction with erosions, hyperemia, friability, spasm, and mold stenosis. Frequent gastroesophageal reflux was seen. Gastric endoscopy revealed a normal postoperative stomach. The patient responded promptly to a program of conservatism with bougienage. For nine months she has been symptom-free.

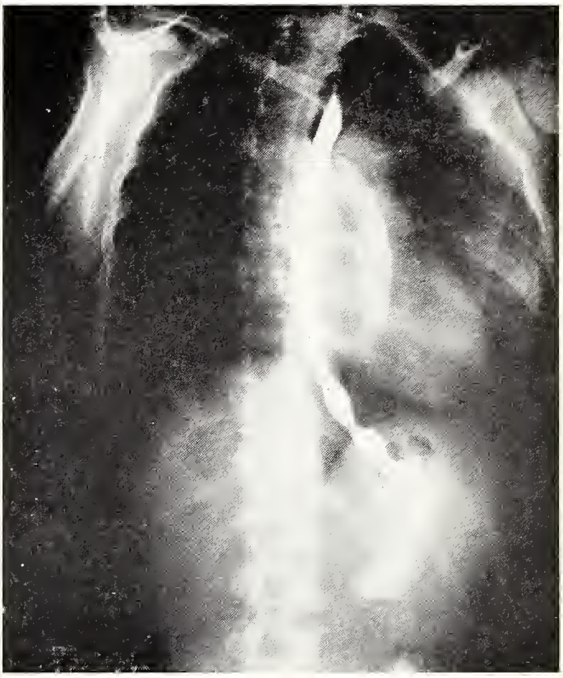

Fig. 2. (Case 3) Diffuse narrowing of the distal esophagus, with fuzziness of the mucosal outline and lack of distensibility. Post-gastrectomy. Esophagitis established by endoscopy.

CASE 4.

Esophagitis due to chalasia presenting as cricopharyngeal achalasia and erroneously diagnosed as carcinoma: A 62-year-old male gave a nine-month history of progressive dysphagia with retrosternal pain appearing soon after swallowing. Because of the pain, he became afraid to eat. Forty pounds of weight has been lost. For three weeks he had been able to swallow only water. The deglutition pattern was most peculiar in that the act could be accomplished only by hyperextending the neck and jutting forward the lower jaw ("Like a chicken drinking water," as he put it). The patient was referred for esophagoscopy to confirm the presence of esophageal carcinoma, suspected on the basis of roentgen studies performed elsewhere. Repeat x-rays did not suggest the presence of carcinoma to us, but the pattern of cricopharyngeal achalasia was recognized. (Fig. 3) At esophagoscopy the entire tube was found to be involved in the most intense generalized esophagitis we have encountered. (Fig. 4) No carcinoma was found. Free reflux, but no hiatus hernia was demonstrated. The patient was promptly dilated and started on the conservative program. His response was prompt and gratifying. The pain and dysphagia disappeared, the cricopharyngeal achalasia abated. He has been symptom free for six months at present, and has regained nearly 30 pounds of his weight.

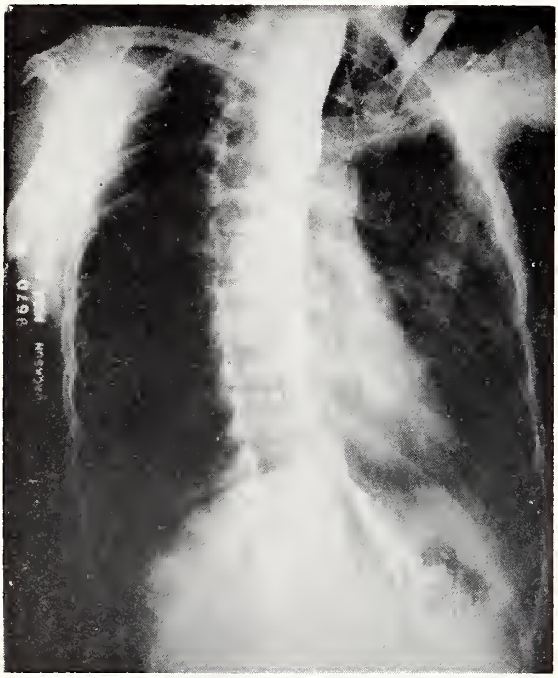

Fig. 3 (Case 4) Marked esophagitis involving virtually the entire tube, associated with cricopharyngeal achalasia.

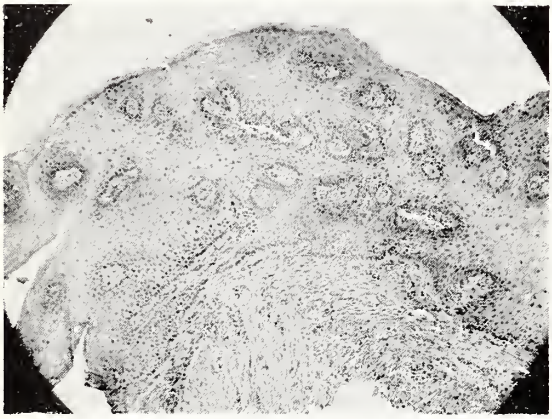

Fig. 4. (Case 4) Biopsy obtained from distal esophagus. Marked inflammatory reaction, primarily submucosal in location.

COMMENT

The esophagitic syndrome is not uncommon. One should think of the existence of the disease in any patient with upper abdominal dyspepsia, particularly if conventional studies are reported as negative, if there is a large element of heartburn, if the symptoms suggest "angina" unrelated to exertion, with nocturnal exaggeration, and most especially if the distress is referred into the back. The utilization of esophagoscopy will permit the process to be disclosed with increased accuracy.

Therapy currently available is monotonous and, when dilatations are necessary, frequently uncomfortable to the patient. It is to be hoped that new measures may be worked out in the future which will be more acceptable. One should, however, realize that the treatment is highly effective if the disease is recognized early and the therapeutic program instituted at once.

Despite the spate of reports dealing with "gastric" cells lining the esophagus, we have thus far encountered no such situation in 26 biopsies. It is quite possible that as additional cases are studied, occasional patients will be found to harbor this type of mucosa. It is our present impression that the gastric-lined esophagus is an uncommon entity.

SUMMARY

The anatomy and physiology of the distal esophagus have been reviewed. The etiology and pathophysiology of reflux esophagitis have been summarized. The condition has been reviewed relative to its various manifestations and its diagnosis. Esophagoscopy is stressed as the best diagnostic tool. Conservative therapy is advocated for all but the most severe instances. Case summaries illustrating the various aspects of esophagitis are presented.

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FESTIVAL OF FAITH

On October 2 the Festival of Faith was held in Tyronza, Arkansas. The thoughts and ideas behind this most unusual meeting are far-reaching. We regret that we did not get to the meeting. We were to have had the distinction of introducing Dr. Alton Ochsner of New Orleans. Wherever he goes Dr. Ochsner rings the bell. His zest, training, and clever reflection of the cosmopolitan atmosphere of New Orleans, plus a great medical foundation, have justly given rise to the dictum, "Mayo of the South," when his name is mentioned.

DELTA MEDICAL MEETS

On October 8, the Delta Medical Society held its seventeenth semi-annual session. Dr. J. M. Alford of Greenwood is president, Dr. Oscar Ringold, president-elect, and Dr. Howard A. Nelson, secretary. The Delta Society always has a fine scientific program. Papers were presented by Dr. J. A. Westerfield on "Increasing Importance of Virus Infections"; Dr. Carl Nichols on "Practical Differential Diagnosis of Jaundice"; Dr. Malcolm D. Arnoult on "The Phenomena of Aging"; Dr. Robert S. Cooke on "Medical Mycology"; Dr. Julien Tatum of "Medical Mycology." Drs. Arnoult and Tatum are from the University Medical Center.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. .... Cardiology
HARVEY F. GARRISON, Sr., M.D. .... Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery,
University Medical Center .... Surgery

CARDIOLOGY

Rheumatic Heart Disease In Pregnancy: The Remote Prognosis in Patients with "Functionally Severe" Disease

By Harold Gorenberg, Jersey City, New Jersey
and Leon C. Chesley, Brooklyn, New York

These authors review their experience with rheumatic heart disease in pregnancy and present a new analysis of the remote mortality in women having severe cardiac impairment when pregnant. They divide their cases into three groups: those seen in the years 1933 to 1939, and state that this group is used for the derivation of the rules of management; the second group covers patients seen from March, 1946, to date. This series was used to show what could be done in the management of the pregnant woman with heart disease under the rules to be outlined and in all patients classified as having severe cardiac impairment seen from the opening of the hospital in 1931 through 1943.

The rules for the management of the pregnant cardiac patient can be summarized as follows:

(1) Extra bedrest. All cardiacs in this clinic were to spend one to two hours in bed each afternoon and to get as much more than eight hours as possible in bed every night.

(2) Because of the difference in congestive failure rates in the age groups, cardiacs of more than 25 years of age are observed at weekly intervals.

(3) Because class III and class IV of functional heart disease have an incidence of at least 75 per cent congestive failure, all patients in these groups are hospitalized at their first visit to the clinic, regardless of how well they may seem to be at that time, and kept at absolute bedrest for the remainder of the pregnancy.

(4) All patients with history of previous decompensation are hospitalized when first seen and kept at absolute bedrest for the remainder of the pregnancy.

(5) Because of the frequent misinterpretation of coughs, colds, sinusitis, nosebleed, etc., as unimportant symptoms, the slightest decrease in cardiac reserve must be searched for diligently and recognized from these suggestive symptoms. Rule V thus is that at the first sign of any decrease in cardiac reserve, the patient is hospitalized and placed at absolute bedrest for the remainder of her pregnancy, even if it only appears as a cold, bronchitis or sinusitis, the basic assumption being that nothing can happen to a pregnant cardiac except heart failure.

(6) Because of the far better mortality figures from vaginal delivery as opposed to cesarean section, rule VI is that no surgical intervention is done. Labor is allowed to occur spontaneously and section done only when obstetrical indications exist.

As regards the immediate maternal prognosis of the pregnant cardiacs, figures are presented to indicate that cardiacs, during pregnancy, actually do better than comparable groups of non-pregnant cardiac women. This may be due to the fact that the more severely damaged cardiac never becomes pregnant, but on the other hand, it appears that the meticulous medical care given to a pregnant cardiac more than offsets the burden of the pregnancy. The maternal loss should be less than 2½ per cent and most figures from outstanding hospitals show less than 1 per cent. From 1946 to date, the authors have reported 550 additional pregnancies in consecutive cardiac clinic patients with rheumatic heart disease and only had one failure and a single death. Statistical review of all of these patients also seems to indicate that pregnancy is only a temporary complication of heart disease and there is nothing to suggest that the heart is damaged by child-bearing or that the course of rheumatic process is thereby accelerated. In addition, repeated pregnancies certainly do not seem to increase the remote annual death rate.

Comment: This is a very well discussed paper, well fortified with significant numbers of patients adequately handled, and my conclusions would seem to be those of the authors, namely that if a patient with rheumatic heart disease is seen early enough in pregnancy to be aborted therapeutically, she has been seen early enough to be given prenatal care and thus be allowed to complete a successful pregnancy, which will not shorten her life. There is no need for therapeutic abortion in any patient and only extremely rarely is cardiac surgery on rheumatic mitral stenosis necessary during pregnancy.

CASE REPORT

MATERNAL MORTALITY STUDY MSMA COMMITTEE ON MATERNAL AND CHILD HEALTH*

Michael Newton, M.D., Chairman
Jackson, Miss.

The Maternal and Child Health Committee of the Mississippi State Medical Association is undertaking a continuing study of maternal deaths in Mississippi. Information regarding deaths is obtained on specially constructed data sheets. It is then reviewed by the committee at its regular quarterly meeting according to the principles laid down in the AMA "Guide to Maternal Death Studies." The object of this review is simply to ascertain as far as possible the main causes of maternal deaths in Mississippi and to point up, in general terms, factors which might under ideal circumstances have been avoidable in a particular case or series of cases. The study is conducted in an anonymous fashion—that is, all identification is removed from the data before review, and it is in no sense a punitive investigation. The committee's hope is that by this study the tragic deaths of young mothers can be reduced in number.

The presentation of the committee's findings will take the form of reports to be given in the Ob-Gyn Section of the annual meetings of the Mississippi State Medical Association and of published case reports illustrating important problems encountered in the handling of obstetrical patients.

The present case was chosen for reporting because it is representative of one of the most common causes of maternal deaths—death from hemorrhage. It also illustrates some other factors, which, under ideal circumstances, might be avoidable.

CASE NO. 8057. R. L., a 27-year-old white woman, para 0, gravida 1, presented herself because she no longer felt her baby move. She was apparently at term but had had no antepartal care. Physical examination revealed her to be grossly overweight—250 lbs. Her blood pressure was 140/90. She had 2 plus edema of the feet and edema of the face and hands. Urinalysis showed 3 plus sugar but no albumin. She was judged to be at term but was not in labor. No fetal heart tones were heard. Shortly after admission labor was induced with intravenous oxytocin, using 1 ampule of pitocin in 500 cc. of saline solution. Labor progressed steadily, lasting six hours in all. 250 cc. of pitocin solution were used. The membranes were ruptured artificially after 5½ hours of labor. Analgesia and anesthesia consisted of trilene. A stillborn male infant weighing 9 lbs., 8 ozs., was delivered spontaneously. There was a first degree laceration. The placenta was delivered uneventfully and following this ergotrate was given, 1 ampule intravenously and 1 ampule intramuscularly. The uterus contracted well and the patient remained in good condition until 45 minutes after delivery. At this time the uterus was noted to be atonic and profuse vaginal bleeding occurred. Shortly thereafter her blood pressure began to fall. She was given dextran, pitocin intravenously and intramuscularly and vitamin K. When bleeding continued the uterus was packed. At this time it was noted that blood was oozing profusely from the first degree laceration and from the injection site in the arm. The patient's blood was typed and cross-matched with that of a sister who was in the hospital, but only about 250 cc. could be obtained for transfusion. In spite of further supportive measures the patient went into irreversible shock and died three hours after delivery.

I. *Adequacy of Data.* The data obtained in this case were rated as 3 in adequacy on a scale of 1 (minimal) to 5 (complete data sheet, relevant explanatory note and autopsy report).

II. *Cause of Death.* (Direct Obstetric, Indirect Obstetric or Non-related Cause). This was considered to be a direct obstetric death due to hemorrhage possibly with hypofibrinogenemia (IA).

III. *Avoidability.* Avoidability is judging in an ideal academic sense. This concept involves three assumptions. First, the physician possessed all the knowledge currently available related to the factors involved in the death. Secondly, by experience, he had reached a high level of technical ability. Third, he had available to him all the facilities present in a well-organized and properly equipped hospital. Admittedly, these are stringent criteria and it is obvious that many maternal deaths occur under less than ideal circumstances. However, improvement in maternal care can only be achieved by setting high standards. Therefore, under these conditions, the committee considered this death to be avoidable.

IV. *Factors of Avoidability.* It is appropriate to determine what avoidable factors were present in a given case and whether they should be assigned to the physician, the hospital, the patient or to a combination of these. In this case the committee considered that a combination of patient, hospital and professional factors were present (see comment below).

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*Committee Members: Michael Newton, M.D., Jackson (Chairman); Frank C. Massengill, M.D., Brookhaven; W. H. Noblin, M.D., Jackson; H. C. Ricks, Jr., M.D., Jackson; Jo. N. Robinson, M.D., Columbus; Margaret P. Veller, M.D., Natchez; William B. Wiener, M.D., Jackson; Blair E. Batson, M.D., Jackson (Consultant); Curtis W. Caine, M.D., Jackson (Consultant); J. Manning Hudson, M.D., Jackson (Consultant).

Comment. Considering this case from the beginning of pregnancy until the patient's death, the first important avoidable factor was probably the lack of antepartal care. By history this patient may well have been diabetic. This is suggested by the fact that she was markedly obese, had an antepartal fetal death and had a large baby. Particular care is required in the antepartal management of the diabetic patient. This must be directed both to control of the diabetes and to early delivery of the infant, to combat unexpected fetal death in the last few weeks of pregnancy.

Secondly, the question of induction of labor in the presence of a dead fetus needs careful consideration. Most patients with dead fetuses will deliver spontaneously in the course of time. The use of intravenous oxytocin in this situation may perhaps be associated with greater danger. In addition, especially in a diabetic, the possibility of cephalopelvic disproportion, which may be a contra-indication to induction, should be carefully weighed. However, in this case this was not apparently a problem.

Thirdly, and most important, is the problem of postpartum hemorrhage. This was the major factor in this patient's death. Had it been possible to obtain adequate blood for replacement, death might not have occurred. This dramatically illustrates the urgent necessity for the provision of adequate blood or facilities for getting it quickly in any institution where deliveries are performed. In addition, in this case, hypofibrinogenemia, although not proved, may have been present. This is a rare obstetrical complication, but its acuteness demands that supplies of fibrinogen be kept on hand or be easily obtainable.

Other measures to control postpartum bleeding are important, too, but they cannot make up for adequate replacement of blood. In circumstances where blood is not available, measures such as those used here, oxytocics and a plasma substitute (dextran), are the most important. Large amounts of oxytocin can be given intravenously. The value of vasoconstrictors, vitamin K and other hemostatic agents in an acute bleeding problem such as this is questionable. Where unexplained postpartum bleeding continues, manual exploration of the lower birth canal and uterus is mandatory to exclude unsuspected tears or rupture of the uterus. At this time, manual compression of the uterus, maintained for as long as necessary, may be lifesaving. Packing the uterus is rarely indicated; it tends to lull the physician into a sense of security, during which time the patient goes into irreversible shock. As a last resort, hysterectomy may be necessary, but this again is predicated upon the presence of adequate blood for replacement.

Summary. Adequate antepartal care remains an essential of good obstetrical practice. Induction of labor should be performed only upon strict indications. The problem of obtaining rapidly adequate amounts of blood for replacement and of having facilities available for major surgery in an emergency should be foremost in the mind of every physician who practices obstetrics.

VETERAN PEDIATRICIAN CONVALESCING

We are greatly missing the reviews in pediatrics by Dr. Harvey F. Garrison, Sr., due to his illness. His interpretation and comments are always clear and to the point. Before he specialized in the diseases of children he was an able practitioner, and has been a great leader in organized medicine in Mississippi, in the Southern Medical and the American Medical associations. He served as president of the Mississippi State Medical Association and of the Southern Medical Association. We trust he will be able to take up his pediatric reviews in the next issue.

Medical Center Miscellany

NEW FACULTY MEMBERS

The University of Mississippi Medical Center in Jackson has added six more faculty members to its teaching staff this fall, according to Dr. D. S. Pankratz, dean and director.

Evenly divided between basic science and clinical courses, the list includes Charles L. Dodgen, Ph.D., associate professor of biochemistry; Berwind Kaufmann, M.D., associate professor of physiology; Emmett J. Johnson, Ph.D., assistant professor of microbiology; M. A. Carnes, M.D., assistant professor of anesthesiology; O. W. Hyman, Jr., M.D., instructor in radiology and Edwin F. Chobot, M.D., instructor in neurosurgery.

Dr. Dodgen received his doctorate at Vanderbilt and had been an assistant professor of biochemistry at State University of New York Downstate Medical Center for four years before coming to Mississippi. A former science teacher on the University of Mississippi campus at Oxford, Dr. Kaufmann got his M.D. at Pennsylvania, interned at Philadelphia General and had been in practice in Kentucky before returning to the University.

Dr. Johnson has just completed a year's post-doctoral research in bacterial physiology as a Markle Fellow at Stanford. He holds his Ph.D. from Louisiana State University. Dr. Carnes is a University of Tennessee graduate and took his anesthesiology residency at Vanderbilt after having been in general practice in Tennessee for six years.

Dr. Hyman holds his M.D. from the University of Tennessee; interned at the University of Kansas Medical Center and took his radiology training at the Mayo Clinic. Formerly an instructor at Vanderbilt, Dr. Chobot is a graduate of the University of Tennessee and took his advanced training at Vanderbilt, the Medical College of Virginia and New York Hospital-Cornell Medical Center.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

Getting Acquainted

During the next few months, this page will carry the names of Academy members by Districts. This will be done to help us get better acquainted as well as to let the readers of *Mississippi Doctor* know who we are.

District I embraces the following counties: Hancock, Harrison, Jackson, George, Stone, Pearl River, Greene and Marion. The District Director is Mr. Millard Jensen of Lucedale.

Members in District I: Dr. Charles P. Bass, Columbia; Dr. E. L. Bolton, Biloxi; Dr. Andrew J. Gay, Long Beach; Dr. Felix J. Harrell, Biloxi; Dr. George W. Hicks, Pascagoula; Dr. Harry E. Hoke, Gulfport; Dr. C. Fred Hoffman, Jr., Gulfport; Dr. Millard Jensen, Lucedale; Dr. S. S. Kety, Picayune; Dr. Victor E. Landry, Lucedale; Dr. A. K. McMillan, Lucedale; Dr. F. C. Minkler, Jr., Pascagoula; Dr. Thomas A. Quigley, Bay St. Louis; Dr. Ernest T. Rieman, Jr., Gulfport; Dr. George W. Rogers, Handsboro; Dr. Joel A. Simpson, Wiggins; Dr. L. O. Stewart, Pascagoula; Dr. C. D. Taylor, Jr., Pass Christian; Dr. D. H. Thornhill, Crosby; Dr. Eugene A. Trudeau, Biloxi.

Associate member: Dr. Robert A. Mitchell, Handsboro.

News Bits

President A. T. Tatum of Petal and Vice-President L. F. Rittelmeyer of Jackson, attended the State Officers Conference in Kansas City in September.

For the third year Mississippi Academy is paying half of the student subscription price for the *Journal GP* for senior students at the University of Mississippi School of Medicine.

According to the recent internship-residency members of the J.A.M.A., three hospitals in Mississippi offer approved general practice residencies: Mississippi Baptist Hospital, and University

Hospital in Jackson; and Mercy Hospital in Vicksburg.

New Member

Dr. Ben Banahan of Jackson, recipient of a Mead Johnson Award in his year of residency at the University Hospital, has been accepted as an associate member of M.A.G.P. Congratulations and welcome!

Category I Courses

The first annual Cancer Symposium will be held at the University Medical Center on December 6 at 9:00 a.m. The one-day program, featuring noted dermatologist, William Danesbeck of Boston, and Murray Copeland of Washington, has 6 hours of category I credit authorized. There is no registration fee. Further from home, Medi Clinic of Minnesota meets in Ft. Lauderdale, Florida, on March 2-12; acceptable for 32 hours. International College of Surgeons Regional meeting in Miami, Florida, will be January 4-7; acceptable for 10 hours credit.

Graduate Courses — TENNESSEE AND TEXAS SCHOOLS OFFER SERIES FOR PRACTITIONERS

Twenty-five postgraduate courses for practitioners in the medical, dental and allied professions are offered by the University of Tennessee Medical Units from September through next June.

The faculty for most courses will be drawn largely from the clinical and full-time faculties of the University. Guest speakers, selected for leadership in their fields, will be included on the faculty for some of the courses.

Programs for the medical profession follow:

Pediatrics, Sept. 15-19; Clinical Electrocardiography, Oct. 8-10; Obstetrics and Gynecology, Oct. 15-17; Allergy, Nov. 6-7; Radiology, Nov. 17-21; Urinary Tract Diseases—Diagnosis and Treatment, March 4-6; Office Management — Psychosomatic and Psychoneurotic Patients Encountered in General Practice, April 22-24; Fractures and Dislocations, April 29-May 1; Diagnosis and Treatment—Ear, Nose, and Throat Disorders, May 6-8; Selected Topics in Internal Medicine; May 11-15; Clinical Use of Radioisotopes, May 18-29; Tumors—Principles of Recognition and Treatment, July 15-17.

Courses for dentists will be:

Crown and Bridge Prosthesis, Feb. 11-13; Pedodontics, March 18-20; Endodontia, March 23-25; Oral Surgery, March 30-April 1; Full Denture Prosthesis, April 17-18; Operative Dentistry, May 25-27; Periodontology, June 10-12.

Other programs scheduled:

Pharmacy Symposium, Nov. 13; Medical Technology, Jan. 23-24; Nursing Supervision, Feb. 16-18; Industrial Nursing, March 9-11; In-Service, April 13-15; X-Ray Technique for X-Ray Technicians, June 4-5.

For additional information, communicate with Wallace Mayton, director of the Postgraduate Department at U-T.

The University of Texas Postgraduate School of Medicine announces the fourth annual course in Anesthesiology to be held February 18, 19 and 20, 1959, in Houston, Texas.

The course is designed to review theory and practice of commonly used anesthetic techniques and will include discussions of some of the newer drugs. Lecturers include: John Adriani, M.D., Charles R. Allen, M.D., Joseph F. Artusio, Jr., M.D., Harold B. Crasilneck, Ph.D., D. C. Grosskreutz, M.D., Emilia A. Hoeflich, M.D., M. T. Jenkins, M.D., Walter H. Mannheimer, M.D., Lawrence F. Schumacher, Jr., M.D., Eugene L. Slataper, M.D., Herman S. Wigodsky, M.D., Ph.D.

The University of Texas Postgraduate School of Medicine announces a course in PRACTICAL ELECTROCARDIOGRAPHY to be held in Houston, Texas, December 15 through 19, 1958. This course will emphasize Spacial Vector-Electrocardiography. Dr. Robert F. Grant of the National Heart Institute, one of the foremost authorities in this field, will be the J. J. and Una Truitt Lecturer for this course. In addition to the evening formal lectures there will be daytime electrocardiographic interpretation practice sessions.

The University of Texas Postgraduate School of Medicine announces its Second Medical Cruise to the Caribbean. Five outstanding lecturers experienced in teaching postgraduate courses have been obtained for the cruise representing fields of medicine, radiology, surgery, obstetrics and gynecology and pediatrics. The cruise (May 5 to 18, 1959) will sail from New Orleans on the *M. S. Stella Polaris*. Twenty-five hours of scheduled teaching will be offered. Inquiries should be directed to The University of Texas, Postgraduate School of Medicine, Houston 25, Texas.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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STAPHYLOCOCCUS AND MISSISSIPPI HOSPITALS

(Guest Editorial)

E. L. King, Administrator
Northeast Mississippi Hospital

As administrators and physicians responsible for the well-being of patients in Mississippi's one hundred or more hospitals, our attention is directed to the prevention of Staphylococcus infection inside our hospital walls. According to information available, the hospitals in this state have been fortunate not to have been bothered more than a minimum with this problem. In adjoining states some hospitals have closed part of their facilities to combat Staphylococcus. It could become a major concern for every hospital in our state in a very short time. Prevention is the best cure for Staphylococcus.

The Joint Commission on Accreditation of Hospitals in a recent bulletin recommends that we have a Committee on Infections in every hospital. This committee may be charged with the investigation, control and prevention of infections. It may be comprised of a member of the medical staff with major surgical privileges, the hospital pathologist, the administrator, the superintendent of nurses, and the housekeeper. All information on the subject may be channeled through this committee.

In our hospital the committee meets as often as necessary, but is scheduled to meet weekly. The first undertaking of the committee was to review all existing practices in the hospital that relate to the Staphylococcus problem. Special consideration was given to dietary and food handling procedures, laundry practices, disposal of wastes, traffic control, air pollution, autoclaves and water sterilizers and education of personnel in aseptic techniques. The committee also considers the use of antibiotics.

The committee is constantly alert for any signs of Staphylococcus disturbance in the hospital. Patients who have been discharged are checked in order to make sure we are doing our job.

Helpful detailed information on the subject may be obtained by referring to Bulletin One of the American Hospital Association dated May 21, 1958, and Bulletin Eighteen of the Joint Commission on Accreditation of Hospitals dated August, 1958.

THE THIRD PARTY

Medicine today is trapped between its ideals of doctor-patient relationship, need for a health program for all, the problem of financing, and above all the urgency for leadership to meet the trends that have created Third Party problems in an America changing from small towns and farms to urbanized areas with a bewildered society. As these changes have taken place, the Third Parties have grown up through medicine's effort to meet needs. In many instances they have gone beyond this goal to the detriment of all. Whatever the cause and whether the changes be good or bad, they have occurred and medicine must furnish the leadership to control or eliminate the bad and to use the good. If medicine takes this leadership in an effort to save for America a proud and dedicated profession, in some areas we shall be confronted with the necessity of an occasional change of mind and a rearrangement of prejudices. There will be occasions when we cannot solve tomorrow's problems with yesterday's ideas. We shall have to discipline ourselves and learn to deal with the idealists and to cope with those less well motivated. We shall need to become astute politicians and statesmen. We shall have to learn the art of compromise without losing the sight of our goal. The major efforts should be toward a positive, constructive contribution closely in league with the future. In our struggle we must use the power of persuasion to preserve the proper relationship with each other and with the public. —LENOX D. BAKER, M.D.

(From the *Southern Medical Journal*)

REQUIEM

We must admit that we felt mournful as the receding sound of the whistle faded in the distance with the diesel-powered Rebel on its last trip from Mobile to St. Louis, October 14. *Commercial Appeal* columnist Paul Flowers of Memphis was a patient in the Booneville hospital on this night and he took note of same. Our thoughts turned to the one who created the Rebel, the beloved late Isaac B. Tigrett. We also thought of the founder of the G. M. and O. Railroad, Colonel Faulkner of Ripley, who was a business man of vision and practical application. But it was Mr. Tigrett who put heart and personality into cold steel. His Rebels were the first to have hostesses, and a spirit of personal welcome, comfort and safety prevailed on his trains. We are sure that local surgeons from Mobile and New Orleans to St. Louis feel as they did when the railroad president died—that our era has lost something tangibly precious in the passing of our stream-lined passenger trains. The railroads have been builders of America, indispensable in its social and economic development. Travel by train had come to be the safest way. Power, strength, and security emanated from the richly resonant whistle that re-echoed through town and countryside. Along with our requiem to the passenger train goes our lament for another waning institution and American forum, the hotel lobby, which has had no small part in shaping the destiny of our nation.

Maybe Tennyson figured it right:

The old order changeth, yielding place to new;
And God fulfils himself in many ways,
Lest one good custom should corrupt the world.

CAME FROM MISSISSIPPI

Dr. Kelly West of Oklahoma City, president of the Southern Medical Association, has the zest, the pioneering spirit, and the drive of Oklahoma, but we might say that his sterling worth in medicine and in citizenship came in large part from his father, Dr. A. K. West, the founder of the Oklahoma School of Medicine. For quite awhile his father lived and practiced in Waynesboro, Mississippi. So some of the Mississippi spirit permeates his personality. Dr. West and the editor of *The Oklahomian,* Dr. Luther Harrison, have been close friends across the years. Dr. Harrison also spent some of his early years in Mississippi—in Tippah County — as a newspaperman. Dr. Harrison not only developed as an editor of ability and wisdom, but he is one of the great orators of the South.

DR. VISE TO SMA COUNCIL

Congratulations are again in order for our able and popular president of the Mississippi State Medical Association, Dr. Guy T. Vise, who has recently been named councilor for the Southern Medical Association from Mississippi. Dr. Vise stands high as a general surgeon and a general practitioner. A native of Tennessee, Dr. Vise has been a Mississippian as long as he has been a doctor. He has been consistently active in organized medicine and has given liberally of his time and talents to his profession and the public.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-second annual meeting of the New Orleans Graduate Medical Assembly will be held March 2, 3, 4 and 5, 1959, headquarters at the Roosevelt Hotel.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, medical motion pictures, round-table luncheons and technical exhibits.

Following the meeting in New Orleans, arrangements have been made for a clinical tour to Mexico City, Cuernavaca, Taxco, Acapulco and San Jose Purua, leaving from New Orleans on Friday, March 6, and returning on Saturday, March 21.

Details of the New Orleans meeting and the clinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

Arrhythmias and Cardiac Emergencies*

I. FRANK TULLIS, M. D.
Memphis, Tenn.

WHILE CARDIAC arrhythmias are usually relatively benign disorders, at times they present serious problems and pressing challenges to the practicing physician. Most instances of arrhythmias consist of simple functional disturbances in people with normal hearts, relatively simple ectopic rhythms in people with organic heart disease, or at times, distressing but harmless short episodes of disturbed heart action in specific attacks.

Atrial tachycardia, atrial flutter, and atrial fibrillation may develop in an essentially normal heart or as part of the picture in the various types of organic heart disease. Atrial tachycardia is more commonly seen in relatively young people with no structural heart disease, as a distressing, but harmless problem. While atrial flutter is more often associated with organic heart disease, some patients have a high degree of AV block such as 4:1, in which cases the ventricular rate is not rapid and produces no serious symptoms. Atrial fibrillation is also more often associated with organic heart disease, but occasionally there is a slow ventricular rate with only minimal pulse irregularity. While ventricular tachycardia is usually associated with organic heart disease, even this arrhythmia can be present with relatively slow rate and not produce great distress. In complete AV block many patients tolerate a very slow ventricular rate quite well.

There are several situations in which arrhythmias become intimately associated with cardiac emergencies. These include the following: (1) patients without known or symptomatic heart disease where an arrhythmia produces sufficient hemodynamic alterations to produce a primary cardiovascular crisis; 2) patients with a specific heart lesion where a disturbance of rhythm adds a completely additional burden to the existing problem; and 3) patients, usually with organic heart disease, where an arrhythmia develops as a complication of the therapy being administered.

CLINICAL PICTURE

While actually any ectopic rhythm could cause a serious episode, the arrhythmias that are most likely to produce or to aggravate seriously a cardiac catastrophe include atrial tachycardia, atrial flutter, atrial fibrillation, ventricular tachycardia and complete AV block. In the case of the tachycardias the principal hemodynamic effect is a striking decrease in cardiac output as a result of inadequate diastolic filling of the heart because of the rapid rate itself. In the case of complete AV block the markedly slow ventricular rate produces decreased minute cardiac output.

Arrhythmias are more apt to produce significant cardiovascular emergencies in certain situations. These include elderly patients with latent coronary insufficiency; patients with known coronary insufficiency; patients with other forms of organic heart disease where there already exists a degree of functional impairment improved either by restricting the demands on the heart or by digitalis and other therapy; and finally patients with recent or remote myocardial infarction where the stage is set for an ectopic rhythm to develop.

The clinical picture presented by catastrophic arrhythmias may be either a coronary insufficiency syndrome or congestive heart failure. In the former there may be chest pain, mild to severe with dyspnea, pallor, sweating, weakness and even collapse. Blood pressure may drop to unobtainable levels, and if the episode persists irreversible shock develops. In all respects the picture may resemble that of acute myocardial infarction, and unless one is careful the true nature of the problem can be missed, especially when the heart sounds are hard to hear and examination is made difficult by labored breathing, grunting, and groaning. In addition, the fast ventricular rate can lead rapidly to heart failure either as acute pulmonary edema or as progressive congestive failure.

Complete AV block produces a serious situation when there occurs an extremely slow ventricular rate, ventricular asystole, or runs of ventricular tachycardia or fibrillation[1]. While it too may produce the clinical pattern of coronary failure or congestive heart failure, the striking catastrophe that it usually presents is the Stokes-Adams episode of fainting or loss of consciousness with shock or convulsive seizures.

As mentioned earlier these arrhythmias may be the primary problem in the acute episode they have produced or they may develop as a complicating factor in other situations. These latter include arrhythmias developing just after acute myocardial infarction, those appearing during the course of congestive heart failure without special precipitating factors, and those that develop unexpectedly following therapy with digitalis and other preparations. Cole, Singian and Katz[2] reported that 20 per cent of their series of patients with acute myocardial infarction developed some ectopic rhythm. A number of these were simple premature systoles, but atrial tachycardia, flutter, and fibrillation, ventricular tachycardia, and AV block were among the most common. In general when either a rapid ventricular rate of one of the tachycardias or an extremely slow rate of complete AV block is added to a given cardiac crisis, it intensifies the clinical picture, producing a greater degree of shock or precipitating congestive heart failure. Often therapy that corrects the arrhythmia will result in return of blood pressure to normal from a shock state or will eliminate congestive failure without the help of additional therapy.

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*Presented before the Section on Medicine at the ninetieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 13-15, 1958.

It is ironic that practically all of the drugs so useful in problems of the heart have actually caused many of these arrhythmias. Practically all arrhythmias can occur as a manifestation of digitalis toxicity, with ventricular tachycardia the traditionally dreaded disorder. Besides digitalis, ventricular tachycardia has also been observed following treatment with quinidine[3 4 5], procaine amide (Pronestyl)[6 3], and norepinephrine[7 8]. When there is AV block, both quinidine and procaine amide have led to ventricular standstill, deformed ventricular contractions, and ventricular fibrillation[6 9 10].

TREATMENT

The first steps in treatment are the simultaneous determination of the ectopic rhythm present and the assessment of the clinical significance of the arrhythmia. The conventional 12-lead electrocardiogram defines most of the abnormal mechanisms, although occasionally esophageal leads are valuable to determine atrial activity. It is important to assess the part played by the ectopic rhythm since, as mentioned earlier, all arrhythmias do not produce serious distress. It is a safe premise, however, that any serious alteration of ventricular rate from normal is distinctly important in any crisis of coronary insufficiency, shock, acute pulmonary edema, or acute congestive failure.

In all the tachycardias, the physician should determine the effect of vagal stimulation sometime during the early period of coping with the problem. Carotid sinus pressure, left and right separately, forceful mechanical gagging, and compression of the abdomen lend themselves most appropriately to urgent situations. The risk of detachment of the retina seems sufficient to discontinue the practice of eyeball pressure routinely, and apomorphine should never be used[11]. In urgent situations, little of the precious time should be lost with vagal stimulation since it can be tested while the physician thinks and medications are being readied.

Since various episodes of cardiac arrhythmia are so different, it is not surprising that different drugs and methods of administration have been proposed. It is imperative for the practicing physician to have a clear concept of the drug he should administer initially in a given situation, and thereafter, in the cases that refuse to follow the desired course, he will have reasonable time to consult standard texts or some of the excellent review articles on the subject[11 12] in order to decide on the best procedure. The following are suggested as the initial drugs in those instances in which the circumstances are such that the arrhythmia produces a cardiac crisis as outlined above or when the arrhythmia complicates some other cardiac crisis.

ATRIAL TACHYCARDIA. When this ectopic rhythm produces the cardiac emergency or when it develops in a patient with acute myocardial infarction with shock or congestive failure, the intravenous injection of digitalis is the treatment of choice. An effective method is cedilanid, 1.6 mg. intravenously slowly in two to four divided doses one to four hours apart. Repeat carotid pressure will often abolish the tachycardia after initial doses of digitalis.

When atrial tachycardia complicates acute myocardial infarction without shock or congestive failure, oral quinidine is the treatment of choice. Quinidine sulfate is given in doses of 0.2 gm. every two hours for five to seven doses daily, increasing the basic dose by 0.1-0.2 gm. every day and preferably not exceeding 0.6 gm. as the individual dose.

ATRIAL FLUTTER. In the majority of cases the drug of choice is digitalis. The long-acting preparations such as digitalis leaf or digitoxin sometimes reduce the ventricular rate more efficiently than short-acting preparations. Cedilanid may be used as outlined above or digitoxin may be given orally (intravenously in shock), 0.6 mg. initially, then 0.4 mg. every six hours to therapeutic effect, then maintenance dose of 0.05 to 0.2 mgm. daily. It is better to strive for adequate slowing of the ventricular rate whether flutter persists or whether it converts to fibrillation.

ATRIAL FIBRILLATION. Treatment is the same as for atrial tachycardia with intravenous digitalis to be given in the urgent situation or in the acute myocardial infarction with shock or congestive failure. Oral quinidine is preferred in myocardial infarction without shock or congestive failure, and likewise is the first choice in acute infections, such as pneumonia, and in hyperthyroidism.

VENTRICULAR TACHYCARDIA. It is more difficult to decide about drugs in ventricular tachycardia, depending upon what facts can be obtained and what observations can be made in a short time.

If there is suggestion of digitalis toxicity in the picture and no problem of renal insufficiency, the drug of choice is potassium chloride[13 11] and the method suggested by Bettinger[13] and associates consists of the intravenous injection of 6 to 60 mEq. at a rate of 0.5 to 1.0 mEq. per minute. These investigators have reported favorable effects on supraventricular as well as ventricular tachycardia and in patients not receiving digitalis as well as in those receiving digitalis. Thus, even in cases of doubt as to the role of digitalis, this drug still seems a promising first choice.

If there is no obvious explanation for the ventricular tachycardia or if it complicates acute myocardial infarction, without severe shock or congestive failure, procaine amide is the drug of choice[15],[16]. In the situation that is critical, it is best to give the preparation intravenously to be certain of its effectiveness. This can be done well by starting an infusion of 5 per cent glucose in water and then administering the procaine amide slowly through the tubing at the rate of 100 mg. per minute and not exceeding 1.0 gm. If there is no doubt concerning absorption, the drug should be given intramuscularly[17],[18] in an average dose of 1.0 gm. with subsequent doses of 0.5 to 1.0 gm. every one to six hours.

If there is definite congestive heart failure but no element of digitalis toxicity, in spite of the longstanding fear against it, the physician should administer digitalis rapidly to achieve effect, in the same manner as cedilanid or digitoxin in atrial tachycardia. Gibson and Schemm[19], Hermann and Hejtmancik[20], Scherf[11] and Enselberg[12] all give us courage to overcome a longstanding concern in this situation.

If there is a history suggesting that the ventricular tachycardia followed as a complication to complete AV block, then both procaine amide and quinidine should be avoided[8],[9],[10]. Here, then, potassium chloride infusion, digitalis, especially if congestive failure is present, or isuprel[7],[21] would be indicated. Isuprel would be given best by infusion as described below.

Complete AV Block. Whether this conduction disturbance constitutes the primary problem or whether it complicates myocardial infarction, it is imperative to produce a reasonable ventricular rate in place of any of the actions that might result, including the extremely slow ventricular rates, ventricular asystole, or runs of ventricular tachycardia or fibrillation. The drugs of choice today are isopropylnorepinephrine (Isuprel)[1],[7],[21],[22] and molar or half-molar sodium lactate[23]. In critical situations isuprel is best given as an intravenous infusion of 1 mg. in 200 cc. 5 per cent glucose in water, to be given at the rate of 1 cc. or 5 mcg. per minute. Molar sodium lactate may be given intravenously by constant infusion, the speed of injection depending upon the situation and the response obtained.

SUMMARY

Many cardiac arrhythmias either produce very little trouble or cause relatively harmless, but distressing episodes. There are circumstances, however, in which an ectopic rhythm becomes the primary factor to produce a cardiovascular crisis. Ectopic rhythms may produce serious problems by complicating myocardial infarction or congestive heart failure, or cardiovascular therapy itself.

These rhythms include chiefly atrial tachycardia, atrial flutter, atrial fibrillation, ventricular tachycardia, and complete AV block. Appropriate circumstances include elderly people with latent coronary insufficiency, individuals with known coronary insufficiency, and patients with other forms of organic heart disease. The clinical picture of such episodes may be that of chest pain with dyspnea, pallor, sweating, weakness, or collapse; shock; acute pulmonary edema; acute congestive heart failure; or Stokes-Adams episodes with fainting, loss of consciousness, or generalized convulsions.

After identification of the arrhythmia and assessment of the part it plays, the practicing physician must have immediately in mind the initial treatment he will administer in a given situation. The preferred treatment for the various arrhythmias under different circumstances is outlined.

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Indirect Placentography: A Diagnostic Aid in Placenta Previa*

CHARLES H. LAKE, M.S., M.D.
Jackson, Miss.

PLACENTA PREVIA still remains a diagnostic problem in many patients and it is this that has prompted this study. It is far too often that the signs and symptoms of this condition are indeterminate.

The fluid cystogram for the diagnosis of placenta previa is certainly nothing new, however, in many hospitals it is seldom done as a diagnostic procedure. In 1934, Ude, Weum, and Urner[1] were the first to report a case of placenta previa which was diagnosed with the aid of a fluid cystogram. The literature contains the reports of many investigators (Ude, Urner, and Robbins[2], Prentiss and Tucker[3], McIver[4], McDowell[5], Hall, Currin, and Lynch[6], Beck and Light[7], Dippel and Brown[8] and Brown and Dippel[9]), who have reported excellent results when using either the soft-tissue or cystographic techniques to diagnose placenta previa.

This review includes all of the fluid cystograms which were made for the diagnosis of placenta from November 1951 to July 1955 at the city of Memphis Hospitals, Maternity Division, Memphis, Tennessee.

Technique

When a fluid cystogram was requested, the following procedures were performed.

A. The patient is catheterized and all of the urine is drained from the bladder. While the cath-

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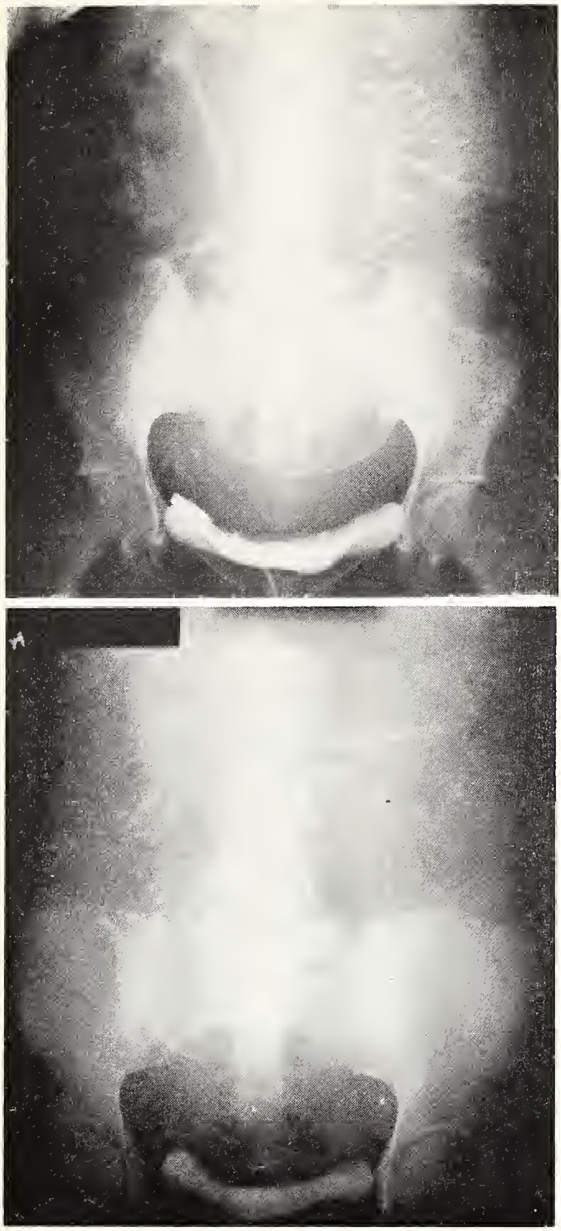
*Presented before the Section on Obstetrics and Gynecology at the ninetieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 13-15, 1958.



FILMS A AND B

eter is in place, 25 cc. of urokon sodium or 30 cc. of diodrast is instilled and the catheter removed.

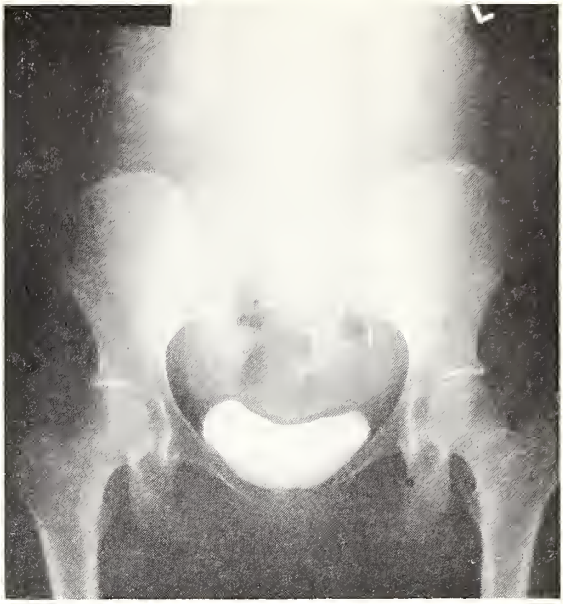
B. She is immediately sent to the radiology department and the following roentgenograms are made with the patient in the supine position.

1. Anterior-posterior of the pelvis.
2. Lateral of the pelvis.
3. Left oblique of the pelvis.
4. Right oblique of the pelvis.

Criteria for Diagnosis

A. The head is more than 1 cm. distance from the bladder edge.

B. Bladder sign: The usual concavity of the bladder may show several concavities and there may be serrations or scalloping of the superior border.



FILM C

C. Absence of the placental shadow in the film.

The following roentgenograms demonstrate these findings. Films A and B are *positive* cystograms and Film C is a *negative* cystogram.

Studies and Results

Since November 1951, this technique and criteria for diagnosis has been used with little or no modification. It should be recognized that this was done in a teaching institution and many fluid cystograms were requested to aid in the development of the technique and to improve the diagnostic ability. During these years, a total of 69 fluid cystograms were made and of these, 58 fluid cystograms were read as *negative*. Eleven fluid cystograms were read as *positive* for placenta previa. The 58 cases that were reported as negative did not show any signs of placenta previa at the time of delivery. The following table is a brief review of the patients that had positive fluid cystograms.

It should be noted from this table that 10 of the 11 patients had a placenta previa. The one false positive case, (Case Summary[1]) had an uneventful spontaneous delivery and by this method a 90.9 per cent correct diagnosis was made.

Case Summary[1] (False positive fluid cystogram). Patient, L. H. This patient was 33 years old, gravida nine, para six, ab. two, who was near term and was admitted to the hospital because of painless vaginal bleeding. She was not in labor and the estimated blood loss was "one pint." Pelvic examination revealed a cervix which was thick, dilated two centimeters and there was evidence of chronic cervicitis. A breech presentation was diagnosed and no other abnormal findings were noted. A fluid cystogram

Positive Fluid Cystograms

Year	Patient	Age	Gravida	Para	Gestation (Months)	Fluid Cystogram	Position	Type of Delivery	Location of Placenta
1953	E. S.	18	IV	III	7	Positive	Breech	C. Section	Marginal
1953	L. H.	33	IX	VI	8 1/2	Positive	Breech	Spont. Del.	Undetermined, not a placenta previa
1953	T. R.	29	II	I	8	Positive	Cephalic	C. Section	Marginal
1954	C. W.	26	I	0	8	Positive	Cephalic	C. Section	Marginal
1954	J. J.	32	VII	V	7 1/2-8	Positive	Cephalic	C. Section	Central
1954	A. W.	38	XI	VIII	9	Positive	Cephalic	C. Section	Marginal
1954	M. R.	25	IV	III	7 1/2-8	Positive	Cephalic	C. Section	Marginal
1954	E. V.	26	V	IV	7 1/2	Positive	Cephalic	C. Section	Marginal
1955	D. L.	18	III	II	6 1/2-7	Positive	Cephalic	C. Section	Central
1955	M. B.	39	X	VIII	6 - 6 1/2	Positive	Breech	Podalic Version Spont. Del.	Marginal
1955	P. J.	35	III	II	7	Positive	Transverse Lie	C. Section	Central

was made and revealed the following: A single fetus with a breech presentation. There was some scalloping of the bladder on the right posterior oblique film and this was interpreted as possibly representing a placenta previa marginalis. The patient was treated with bedrest and after two days, was discharged home without any evidence of bleeding. Fifteen days later, she was readmitted in active labor. After nine hours of labor, she delivered a normal infant and there was no evidence of placenta previa.

Case Summary[2] (Positive fluid cystogram). Patient P. J. This patient was 35 years old, gravida three, para two, who was approximately seven months gestation and was admitted to the hospital because of painless vaginal bleeding. She was not in labor and the estimated blood loss was "one-half pint." Pelvic examination revealed a closed cervix and no cervicitis. A fluid cystogram was made and revealed the following: A single fetus in a high transverse line. Gestation is about seven months and there is scalloping of the superior aspect of the bladder. Findings represent a placenta previa. She was treated with bedrest and after eight days, was discharged home. When she was discharged, 500 cc. of whole blood were made available in the blood bank. After twelve days at home, she was readmitted with painless vaginal bleeding and again placed on bedrest. She continued to bleed after being hospitalized for ten hours so a low cervical Caesarean section was performed and a premature, 3 lb. 7 oz. male was delivered in good condition. The patient had an uneventful postoperative course.

Conclusions

1. These results have been most gratifying, and in each case the patient has benefitted by these studies.

2. Since special roentgenological equipment is not necessary and since the technique is rather simple, any interested obstetrician and roentgenologist can perform this procedure which can certainly be a useful aid in the diagnosis of placenta previa.

3. Careful correlation of the roentgenological findings and the clinical signs and symptoms is urged in all cases. Caesarean section should not be done solely on the basis of indirect placentography. It should be used to corroborate the clinical signs and symptoms.

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The Increasing Importance of Virus Infections

J. A. WESTERFIELD, M.D.
Merigold, Miss.

A FEW YEARS AGO it would have been farsighted to think of viruses as the cause of many diseases with which they are associated today. Today it would be considered shortsighted not to associate them with many of our disease patterns. The virus has completely arrived. It was not too long ago when the etiological factor of infectious diseases belonged to the world of bacteriology, and each infectious disease was neatly assigned a bacterial agent. Influenza was supposedly due to a bacterial agent, Hemophilus Influenzae. However, evidence was accumulating back in 1918 during the great pandemic, that some other etiologic source of disease would have to be applied to influenza. There is more and more of the authoritative word being written in medical papers regarding the viruses. The virus is not only being accepted by the medical world, but is also being received with open arms by the public. It has become stylish to be affected by the virus whether it be an old member of the family or some strange and new member. The term virus seems to impart a mystical quality to a great many people.

Viruses were tentatively discovered by the Russian, Iwanowski, in 1892 and recognized as a new class of disease-producing agents by the Dutch scientist. Beijerinck, in 1898. In 1898 Loffler and Frosch identified the first animal virus, the foot and mouth disease, of cattle. In 1901 Reed and associates discovered the first virus disease of man, yellow fever. Doctors heretofore had worked with diseases not known to be caused by viruses for many years and had developed such protective means as Jennerian vaccination against smallpox, and Pasteur's vaccination against rabies without recognition that the actual causes of such diseases were members of a new kind of infectious disease-producing agent.

The rational control of infectious disease is based on certain knowledge of the disease and its causative agent. The problem of diagnosis by identification of the causative agent has increased in difficulty, particularly in regard to virus diseases. In the past few years many previously unidentified viruses have been described as having produced, or as having been associated with specific diseases. Prior to tissue culture, viral isolations were practically limited to animal inoculation. This was slow, exhaustive, and costly. Identification of poliomyelitis was dependent upon preliminary isolation of the virus in monkeys, followed by typing in additional monkeys. The introduction and improvement of the tissue culture method for growing of micro-organisms has completely revolutionized the field of virology. The virus field has received great impetus from two recent achievements:

1. The identification and typing of poliomyelitis virus with subsequent production of an effective vaccine; which is a complete and absorbing adventure in itself.
2. The accurate prediction of the recent influenza pandemic, the identification of the Asian virus strain and subsequent production of an effective vaccine.

The question that naturally arises is, "Did the vaccine do any good?" The question can be answered briefly in the affirmative regarding both Salk poliomyelitis virus vaccine and Asian influenza vaccine. When the recommended dose of Asian vaccine 1 cc. was administered the results of most studies indicated a vaccine efficiency in the order of 50 to 75 per cent reduction in cases (Davenport). Analysis has revealed the use of two doses of Salk poliomyelitis vaccine in Minnesota in 1955-1956 to have been 83 per cent protective against paralytic poliomyelitis.

A multi-purpose vaccine that may protect against many diseases caused by viruses may be possible according to the results reported by Dr. William Pelon and Dr. William J. Mogabgob of Tulane Medical School. Their report was presented to the Southern Section of the American Federation of Clinical Research. The possibility of the development of a multi-purpose vaccine was shown by establishing that influenza viruses have been grown in tissue cultures made from monkey kidneys. The vaccine now in use is prepared from viruses grown in eggs.

Although the struggle with influenza viruses occupies the foreground, other agents, many of which remain unidentified, ordinarily cause a far greater proportion of acute diseases of the respiratory tract. With the advent of tissue culture methods, many new agents are being detected for the first time. A number of these agents are known to

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*Read before the 70th semi-annual meeting of the Delta Medical Society, October 8, 1958, Greenwood, Miss.

cause the illnesses commonly called flu or grippe. Those which are known to cause flu are of two kinds: Influenza viruses and adeno viruses. Thus far two vaccinations have been necessary because of the methods of preparation of vaccines of the two types of viruses have been different. Dr. Mogabgob said, "That as has already been shown that adeno-virus vaccine can be prepared in monkey kidney tissue cultures, the observation that influenza virus can be grown in the same medium makes possible the development of a dual-purpose vaccine."

The investigators have also isolated a virus, which they label "2060 virus" and which they have shown to be the cause of milder respiratory infections, similar to the common cold. The JH virus and the 2060 virus are believed to cause many colds. Dr. Pelon said further that they "have shown that these viruses produce different antibodies, so that both must be included in a vaccine to protect against cold-like illnesses. There are probably other cold-producing viruses which have not as yet been isolated. We believe that these two viruses together with those causing flu or grippe could be included in a vaccine to protect against these respiratory diseases."

A vaccine made from the influenza virus would, according to the report, be the basic vaccine to which other viruses would be added to protect against adeno-viruses, JH virus, and 2060 virus. Possibly even polio viruses could be added. Little is known as yet about the Echo and Coxsackie group of viruses. Therefore, there is much work to be done before total protection against all flu or cold-like illnesses can be afforded. Also, Dr. Mogabgob pointed out, there may be a limit to the number of types of viruses which can be added to vaccine and still obtain anti-body response. This—an effective poliomyelitis vaccine, Asian influenza vaccine, and some undeniable progress on a multipurpose vaccine—is a far cry from a few short years ago when there was no protection from these viral diseases except the acquired natural immunity.

In view of the recent epidemic of measles during (late 1957-early 1958) which we probably all observed variations from the expected in length of prodromal stage, severity of the disease, frequency of complications, and large number of adults involved: the reports on exanthema caused by Echo-9 virus, a recently recognized disease entity, are particularly of interest.

During the summer of 1957 an epidemic of exanthema occurred in Minnesota. Clinically the patients presented a generalized morbilliform rash lasting from one to three days, some patients showing fever. The infection spread within families and within neighborhoods. While rash alone was common, symptoms of all patients made up a spectrum ranging from inapparent infections, to skin rash with little disability, skin rash and fever, skin rash and aseptic meningitis, and finally aseptic meningitis without rash. The incidence of disease from Echo-9 virus in Minnesota during the summer was estimated by the Minnesota Department of Health's projections from survey findings, suggested that over 200,000 cases occurred in the Minneapolis-St. Paul area, and that as many as 400,000 cases occurred in the whole state.

There has been much information gathered regarding the Coxsackle viruses during the past ten years. The family is large, consisting of numerous distinct types that fall into two groups, A and B. The Coxsackie virus family as a whole is only part of a much larger group of entero viruses.

The most common form of human infection produced by group B (Coxsackie) is aseptic meningitis, but the viruses also frequently cause epidemic pleurodynia or pleurodynia with meningitis. Myocarditis caused by Group B virus was first identified in the newborn infants of infected mothers. The original series of ten cases included six deaths. Now, 25 well-documented fatal infections are on record. Interest has been aroused by the possibility that less dramatic forms of myocarditis occur in older children and in adults.

Group A Coxsackie viruses now also have been found capable of causing aseptic meningitis. At least six immuno types of Group A have been associated with herpangina. Herpangina is characterized by abrupt onset, fever of two or three days' duration, sore throat and occasionally vomiting. Characteristic lesions appear in the mouth. The anterior pillars of the fauces are a common site, less frequently the soft palate, uvula, tongue or tonsils. The lesion is a grayish white papule, surrounded by a red areola. The areola becomes intense, and the vesicle enlarges rapidly and quickly forms a shallow ulcer that is rarely much more than five mm. in diameter. Some patients may have aseptic meningitis. Herpangina is a brief, self-limited disease.

At least 46 distinct viruses including three types of polio viruses, 19 types of Coxsackie A, five types of Coxsackie B, and 19 types of Echo viruses recently grouped together as entero viruses are already known to be multiplying at various times in the human intestinal tract, and a considerable number of new viruses are conceivably awaiting their turn to be added to the rapidly expanding group of human viruses.

These many new isolations and the extremely rapid progress being made offers us hope for early enlightenment of the many dark complexities of virology.

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INTERPRETING MEDICAL LITERATURE

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CARDIOLOGY

CARDIAC ARRHYTHMIAS IN CHRONIC COR PULMONALE

LEO J.CORAZZA, M.D., *and* BERHARD H. PASTOR, M.D.
Veterans Administration Hospital, Philadelphia, Pa.

The authors introduce this article with the statement that cardiac arrhythmias are considered rare in chronic cor pulmonale and actually refer to comments made by previous authorities that such arrhythmias strongly suggest the co-existence of other types of heart disease. Recent reviews by Hecht are quoted as saying that cardiac arrhythmias are quite infrequent in any type of cor pulmonale and a similar opinion seems to be expressed in some of the current textbooks. At the Philadelphia Veterans' Administration Hospital, however, frequent persistent and troublesome arrhythmias have been encountered in patients with chronic pulmonary disease and this observation prompted the review of all cases of chronic cor pulmonale to determine the frequency and type of arrhythmia.

Records of 122 patients who had chronic cor pulmonale were reviewed. Forty-seven patients, or 31 per cent of these, had one or more arrhythmias, the most common being atrial and ventricular premature beats, but frequently being characterized by atrial flutter, atrial fibrillation, nodal rhythm, supra-ventricular tachycardia and other rhythm disturbances. Many of these arrhythmias were transient and coincident with pulmonary infection and an occasional case was related to digitalis toxicity. The authors' opinion was that arrhythmias are not at all infrequent in chronic cor pulmonale, that their development is favored by the presence of infection with accompanying bronchospasm, hypoxia, and hypercapnia.

COMMENTS: This review is quite similar to some years ago concerning the recognition that cardiac arrhythmias were not infrequent in constrictive pericarditis. Both constrictive pericarditis and chronic cor pulmonale are frequently complicated by arrhythmias and their presence or absence is of no diagnostic value.

SURGERY

THE NATURAL HISTORY OF THE PATIENT WITH CIRRHOSIS OF THE LIVER WITH ESOPHAGEAL VARICES FOLLOWING THE FIRST MASSIVE HEMORRHAGE

R., COHN, M.D., *and* F.W. BLAISDELL, M.D.
Surg., Gynec. and Obst., 106:699 (June), 1958

The management of esophageal hemorrhage secondary to portal cirrhosis with portal hypertension remains a debated and an essentially unsolved problem. The great importance of this situation is underscored by the fact that cirrhosis of the liver is now one of the ten leading causes of death in the United States, and between the ages of 45 and 64 it may be outranked only by heart disease, cancer, and cerebral hemorrhage—according to Rousselot.

Most surgeons feel that either portacaval or splenorenal shunt should be done following the initial hemorrhage if the patient survives and if certain criteria of operability can be met. This reviewer currently prefers the splenorenal shunt (with, of course, splenectomy) in the acute bleeder, following initial control of the esophageal hemorrhage with the Sengstaken-Blakemore double-balloon esophagogastric tube.

Even so, there are many surgeons who do not believe that portacaval shunt serves a particularly useful purpose, and Cohn and Blaisdell are among this group. They have reviewed the fate of all patients with cirrhosis who entered the San Francisco Hospital from June 1947 to June 1957 who survived their first massive gastro-intestinal hemorrhage and who were eligible for portacaval anastomosis on the basis of the usual criteria, but in whom the operation was not done. The findings were: (1) about 21 per cent of all hospital patients with cirrhosis entered because of massive hemorrhage. (2) Of this group, 338 or 74 per cent died after this first hemorrhage, leaving 118 patients for whom treatment was possible. When this group had been sifted by using the criteria generally acceptable for portacaval anastomosis, 40 patients remained. Of these 40 patients, 23 are known to be dead, but 8 survived more than 3 years. One survived 13 years, finally dying in hepatic coma.

According to Cohn and Blaisdell, "It would appear that about one-third of all patients who have survived the first hemorrhage and who qualify for portacaval shunt anastomosis on the basis of present-day accepted clinical and laboratory criteria will survive 5 years and that one-third of this same group will die of gastro-intestinal hemorrhage."

In concluding this piece, the reviewer would offer one very practical consideration, namely, that since the mortality is tragically great in the acute bleeder, emergency splenorenal shunt with splenectomy may be a useful procedure. Disappointed with the high incidence of liver failure following portacaval shunt in the presence of acute massive hemorrhage, I have recently performed splenorenal shunt in two patients who did well and left the hospital without further bleeding.

James D. Hardy

WALNUT OPENS NEW HEALTH CENTER

The Walnut Health Center in Tippah County was officially opened and dedicated to the public on Sunday afternoon, October 5, 1958.

The project, which started as a community project for the town of Walnut, was turned into a first district bond issue, and voted upon by the citizens of the district early in the summer.

Contract was let in July for the sum of $13,980 and construction was finished the last of September. The clinic is air-conditioned and heated by natural gas. It is furnished rent-free to Dr. R. C. Tibbs, youthful director of the clinic.

Dr. Tibbs came to Walnut in January of this year and improvised quarters were made available for him until the building was completed. It was after his coming that the civic groups started the drive to build a modern health clinic and got the cooperation from other communities in the First District to make it a district proposition. The building has two reception rooms, four examination rooms, laboratory, two bedrooms, three baths and a private office, all well equipped for service.

Dr. Tibbs, a native of Hushpuckena, Mississippi, is a graduate of Duncan High School, Delta State College, and after two years of medicine at Ole Miss he received his M.D. degree from the University of Tennessee at Memphis, with internship at the Methodist Hospital in Memphis.

Young Dr. Tibbs finds the new clinic built by the people of Walnut a ready asset to practice in this thriving Tippah County community.

President's Page

"A state medical association exists to serve the profession and the public. This mission can be effectively carried out only if the organization is competent, sensitive to needs of those it serves, and truly representative of its membership."

With these words as a preface for action, your Mississippi State Medical Association House of Delegates voted unanimously last May to revise and update our organizational structure. Literally, we forged new tools with which to meet the challenge of greater tasks in our second century of service. As I visit physicians and component societies throughout the state, I find growing interest in what our association is doing and how the work is being done.

Mississippi physicians—almost without exception—recognize that the profession through the state association is doing more today in carrying out its several responsibilities than ever before. But not every member has a full appreciation for the marvelous mechanism in which he owns a share. It is about the "how," not the "what," I am most often asked.

There are nine councils and our governing body, the Board of Trustees, charged with carrying out MSMA's professional and organizational work. Your elected officers have management responsibilities within a fixed framework of authority and work closely with these official bodies. All—meaning officers, trustees, and council members—are accountable to the membership through the House of Delegates from which their commissions are initially received.

This fundamentally direct and flexible grouping of working bodies was the result of nearly two years' study. In 1956, Dr. Lamar Bailey recommended in his presidential address that a study project be undertaken to coordinate and simplify committee work and reporting. During the 1956-57 association year, a student commission under the chairmanship of the then-president-elect, Dr. Howard A. Nelson, recommended necessary revisions in the Constitution and By-Laws to bring the association up to date with modern medical organization. Action was deferred on the recommendations until the 1958 annual session to allow full study and consideration.

Your state medical association resembles the American Medical Association in its present organization. The primary policy-making body is the House of Delegates. To govern and manage over-all association affairs between meetings of the House, there is a Board of Trustees, formerly known as the Council. A trustee may serve not more than three consecutive terms of three years each and the present Board, unlike the former Council, has no authority in judicial matters.

Most scientific and socioeconomic work of the association is carried on by nine elected groups called councils. These are the Councils on Medical Service, Scientific Assembly, Socioeconomic Affairs, Constitution and By-Laws, Legislation, Budget and Finance, Medical Education, and the Editorial and Judicial Councils. Many of these groups appoint working committees charged with specific tasks. By carefully coordinating scientific study, management, and related efforts, the councils carry out mandates of the membership and report each year to members through the House of Delegates.

Every member of the association has a responsibility in knowing what his MSMA is doing and in sharing his ideas and suggestions for the benefit of the profession. Every member should participate in meetings of the association, read its official publications, familiarize himself with the Constitution and By-Laws, and study actions of the House of Delegates. An enlightened membership means a more able medical profession in terms of leadership and the discharge of medicine's high responsibilities. Mississippi physicians must continue to develop and use their state medical association as the best means of realizing their goals of service.

Guy T. Vise, M.D.
President

I know no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education.

—Thomas Jefferson

Medical Center Miscellany

Planning and Development Committee

Plans for both long-range and immediate over-all development of the University Medical Center will come under the guidance of a newly formed committee which held its initial meeting at the Medical Center on November 19.

Appointed by Dr. D. S. Pankratz who will serve as its chairman, the Planning and Development Committee includes Dr. Verner Holmes of McComb, member of the Board of Trustees of the Institutions of Higher Learning; Dr. E. R. Jobe, board executive secretary; Dr. A. L. Gray, chief public health officer for the state; Dr. David B. Wilson, University Hospital director; Frank Zimmerman, Medical Center comptroller; Dr. Arthur C. Guyton, professor of physiology, and Dr. Blair Batson, professor of pediatrics, and Chancellor J. D. Williams, *ex officio*.

The committee is charged with mapping out an ultimate training program, and analyzing the plant design and financing needed to implement the plan.

Although its scope will be far-reaching, the committee will not attempt to "freeze" plans but rather to guard Medical Center development from emotional pressures by exerting intelligent supervision, according to Dr. Pankratz.

The committee's immediate goal, he said, is to draw up by midsummer a working blueprint for growth and expansion during the next two years. Nurse education facilities, children's hospital beds and research space are among the projects given top priority for study, he said.

Chancellor Williams urged committee members to evaluate all proposals as to their contributions to medical education since, he stressed, the Medical Center is primarily an educational facility.

All expansions must be measured against medical and ancillary educational needs, he said, adding that the committee should decide the extent of Medical Center's responsibility in providing medically-related training.

Research Foundation

Another organization concerned with Medical Center development held its second meeting at the Medical Center in October.

The Mississippi Foundation for Medical Research and Development was chartered in 1956 to solicit and receive gifts and donations for medical research, education and development under the direction of the University of Mississippi.

A. Boyd Campbell of Jackson was named to the board of directors in October replacing the late Dr. Henry Boswell. Chancellor J. D. Williams is president of the board; former Governor Hugh White is vice-president and Rex I. Brown of Jackson is treasurer.

Nurse Dormitory

A $300,000 dormitory for student nurses will be built at the Medical Center in the near future. To be financed by the Building Commission on Hospital Care, the dormitory will be located on the site of the old Highway Patrol building razed last year.

Although some minor revisions are yet to be made, tentative plans drawn by R. W. Naef, architect, call for a two-story contemporary building to house no fewer than 80 student nurses. According to Comptroller Frank Zimmerman, construction costs when bids are let will determine whether the dormitory will accomodate 80 or 96 girls.

Nursing School Dean Christine Oglevee predicts that student nurse enrollment will increase materially when the dormitory is completed. The school now has 50 students.

Society Formed

Nu Sigma Nu alumni are advising and assisting a newly formed organization on the University Medical Center campus. Called the Galen Society, the group has seven charter members who will petition Nu Sigma Nu for permission to establish a chapter at the Ole Miss medical school.

A junior medical student from Pontotoc, Jack Stokes, is president of the society. Freshman Bill Clark of Stoneville is secretary - treasurer and Senior Kelly Segars of Belmont is interfraternity council representative.

Dr. William Gillen, assistant professor of psychiatry and chief of the neurology division at the Center, is faculty adviser and Dr. Walter Simmons, clinical assistant professor of obstetrics-gynecology, is activities chairman.

Dr. W. F. Enneking, associate professor of orthopedics, heads the local Nu Sigma Nu alumni chapter.

NOTES FROM THE EXECUTIVE OFFICER OF THE

MISSISSIPPI STATE BOARD OF HEALTH

A. L. Gray, M.D.
Executive Officer

OUTBREAKS OF FOOD POISONING

A very recent occurrence of a food-borne outbreak of food poisoning in a Mississippi public school points up the necessity of constant alertness of private physicians in early detection and reporting to their health officer of such outbreaks.

Seventy-five cases involving students and teachers became ill with acute nausea, vomiting, abdominal pain, and diarrhea — some with shock — about one to three hours after their noon meal at the school. Several were seen by their physicians who immediately called the county health department. Turkey and dressing was the vehicle and staphylococci were isolated from these items as well as in the nose and throat of cases and some of the workers in the school cafeteria. These isolations were done under the direction of Dr. H. C. Ricks.

Increasing group feeding in schools and elsewhere increases the chance of large outbreaks of this and other types of food poisonings. Proper study of these is likely to detect corrective measures needed to forego subsequent episodes. Reporting of disease outbreaks by physicians as soon as suspected is a public responsibility and is most helpful in a continuing program of food safety.

POLIO SUMMARY

Dr. Durward Blakey, Director of the Division of Preventable Disease Control, summarizes the polio situation to date this year as follows:

100 cases with onset since January 1, of which 84 were under 20 years of age.

Age group distribution was as follows:

Age	Per Cent of Total
0 - 4	30
5 - 9	21
10 - 14	19
15 - 19	14
20 - over	16

Thus to improve the situation markedly, the younger groups must have most attention at immunization.

DIPHTHERIA THREAT

Two recent fulminating cases of diphtheria in Central Mississippi resulting in death may be a signal for even more serious trouble with this disease. Both deaths were apparently due to myocardial involvement. While only 22 cases have been reported in 1958 in Mississippi, six of them occurred in September and six in October. The chief concern is that these two rapidly fatal cases may portend the beginning of more virulent diphtheria in Mississippi than has commonly occurred. Other sections of the country have recently experienced rather extensive outbreaks of virulent diphtheria, and the two deaths mentioned above may be the beginning of a similar experience in Mississippi.

All physicians are urged to stress diphtheria, tetanus, and pertussis immunization for the children of all families they serve as well as polio and other immunizations.

FACT BETTER THAN SUSPICION

A physician recently complained that the county health department would not accept immunizations done by private physicians. This complaint, of course, is without foundation, because our state and local health departments are not in a position to accept or reject immunization services rendered by a physician to his patients. Further inquiry about the complaint brought out the fact that his complaint was based on requirements of those regulating travel to foreign countries that certain immunizations must be done and must be certified by an official health agency. The State Board of Health does not regulate this. The State Board of Health and county health departments do certify immunizations done by a private physician when he stipulates that it has been done. Foreign travel regulators would not know whether a given signature is that of a licensed physician, but quickly recognize seal of an official health agency of the area in which the traveler was immunized.

Complains sometimes create suspicion and originate rumors of broad implications. Complaints and criticisms should not intimate total facts until bases for them are placed in the context of total facts.

HEALTH CENTER CONSTRUCTION FOR COUNTY HEALTH DEPARTMENTS

New health centers are in prospect in the following countries based on applications now being

(Continued on page 150)

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

Greetings of the Season

We extend our best wishes for a Merry Christmas and a Happy New Year. We are grateful to advertiser, reader, and to each essayist, all of whom contribute indispensably to the success of the journal. Progress in medicine is traveling at a rapid rate. We welcome papers dealing in research, case reports, original technics. Our greatest desire is to be of service to the medical profession and in turn to the people and we bow gratefully to all who have helped us travel in this direction.

SOUTHERN MEDICAL ASSOCIATION

Dr. F. J. L. Blasingame, executive vice-president of the American Medical Association, was guest speaker for the President's Luncheon at the meeting of the Southern Medical. His address was quite well balanced, meaty and informative.

* * *

The symposium on the aged at the Southern Medical in New Orleans attracted a phenomenal interest. Drs. Tom Spies and Alton Ochsner were among the outstanding men on the panel. Dr. J. B. Cummings of Fort Worth, Texas, contributed outstandingly to the section. A native of Tennessee, most of his practicing years were spent in Texas. Now one hundred years of age, he is still active in practice. He says he will practice as long as his toes point forward, and quit only when they point upward. He has practiced through the saddlebags era, then the horse and buggy, the Model T and now in a swept wing automobile power drive. Although many changes have taken place, he still uses some medicines that have been acceptable for sixty years. On smoking he observed, "Smoking never has done any good and it can hurt you." He urged moderation in everything.

His eyesight is not as good as it once was, but His wife died in 1917 without having had any

Dr. Cummings moved to Fort Worth in 1903. His wife died in 1917 without having had any children. He is a graduate of the University of Nashville and University of the South.

His final advice was, "Tell them just to keep going; there is no use giving up now."

In discussing the old age problem, one doctor observed, "One man on his feet is worth four on his seat." Another, "It is not more doctors we need, it is fewer sick people." "We have 14 million people past 65 years of age. Each should be evaluated to see what useful work he can do."

* * *

The Tulane Alumni Banquet was almost in the nature of a homecoming during the Southern Medical at New Orleans. About two hundred doctors attended. Dr. M. E. Lapman, the dean of the Medical School, is able and a clever speaker. Dr. Harris, president of Tulane, was sparkling and forceful. A deep thinker, he activates his speech with wit and wisdom.

It was good to see there many eminent Tulanians. Dr. C. C. Bass, a native of Mississippi, is a former dean of Tulane and a past president of the Southern Medical Association. He is doing research work on the prevention of tooth decay. To this challenging health problem we believe Dr. Bass will find the answer. He rendered great service in malaria research and was a fine dean and wonderful teacher when connected with Tulane.

Dr. Isidore Cohn, one of the very close friends of Dr. Rudolph Matas, was a great teacher in Tulane for many years. To talk to him is a good schooling. Dr. T. B. Sellers, who now has a home over on the Mississippi Coast, has been successful in the field of obstetrics in New Orleans. And one of the most delightful of all is Dr. Woody Beacham, known across the nation in obstetrics also and also a very close friend to Dr. Matas.

BETTER SERVICE FOR LESS MONEY

The progress of medicine has been so rapid it is hard for all oars to keep an even keel. We hear complaints such as: Doctors charge too much, medicine is unreasonably costly, hospital bills are excessive. From the beginning of civilization it can be asserted that the cost of being sick has always been too great. But modern costs of illness are not all to be blamed on doctors, nurses, druggists, and hospitals. People have never demanded so much of these servants in time of illness. They want the best, on the minute. With all our modern media of enlightenment they presume to suggest their own treatment. Sometimes a family doctor might render a better service than the specialist who is sought without referral. The patient wants the best room at the hospital, all his costs covered by insurance, and a nice surplus check in addition. This business of using insurance as an "investment" is steadily upping insurance rates beyond the ability of the lower income group.

The cost of medicine is high. But what would we do without the expensive and tedious work of the research laboratories? How could ye go along without insurance? How can we discount the shortened stay at the hospital, the more thorough examination, the years added to life expectancy? Our quotient certainly reveals more healthy people and fewer sick ones, and more who are living more productively and longer.

DR. GILLESPIE

In the death of Dr. Guy Tillman Gillespie, Sr., president emeritus of Belhaven College, our state lost a good friend not only to higher education but to all good causes. He was an able college president, a power in living and teaching Christianity, his wisdom exerting untold influence upon the generations of students which passed under his direction. Dr. Gillespie was especially interested in the founding of our four-year medical school and never failed to help in any way he could to bring about this great step in our state's progress. He was interested in balancing agriculture and industry, business and education, intellectual and spiritual assets. His life and work contributed to the increasing knowledge of our destiny.

TEXAS CENTENNARIANS

The longevity of our two living Confederate veterans points up another Texas primacy—steers grow long horns and Texans live long years. Of course Dr. Cummings got his start in Tennessee, and Mr. Williams was born in Itawamba County, Mississippi, November 14, 1842. He was a forager for the Confederate infantry, and we feel quite sure he is the man whom my father talked about many times. This forager would slyly get a turkey on his fishhook and lead him away from the barnyard. Fishhooks, corn and peas were his armamentarium and he must have been an expert on hooking a fowl, which would "follow" him over the remonstrations of a farm wife. He has 12 living children and lives about seventy-five miles from Houston.

PRESIDENT OFFERS STATE'S SET-UP

President Vise's discussion in this issue on the workings of the official set-up in the state organization is informative and will be read with interest and profit. Dr. Vise is well informed on medical organization, medical problems and medical practice.

The Northeast Mississippi Medical Society will meet at Tupelo on Tuesday night, December 9. Since we have been holding the meetings at Tupelo the attendance has improved. The panel discussion plan seems to be favored also. This type of meeting is becoming popular with many medical groups. Much is accomplished in less time.

(Continued from page 147)

processed for Hill-Burton financial assistance:

- Lee
- Hinds
- Sunflower
- Webster
- Jasper
- Wayne
- Panola

The Commission on Hospital Care anticipates approving these applications when applications from sponsoring counties are in order.

MID-SOUTH MEDICAL ASSEMBLY

Just around the corner we have the Mid-South Postgraduate Medical Assembly in Memphis. Be ready for it. It is the mother organization in this section. It furnishes a wonderful opportunity for doctors to be brought up to now on the newest and the best in medicine. February 10-13 is the date; Peabody Hotel.

The Postgraduate of New Orleans is furnishing fine programs also and many in Mississippi will be interested in this Assembly. It meets March 2-5, 1959.

ICS REGIONAL

The Southeastern Regional Meeting of the International College of Surgeons will be held at the Americana Hotel, Bal Harbour, Miami Beach, Florida, from January 4 to 7, 1959.

This meeting has been approved for general practitioners also, by the American Academy of General Practice for Category I credit.

For those interested, write Harold O. Hallstrand, M.D., 7210 Red Road, South Miami, Florida.

ANNOUNCEMENTS

The Vicksburg Clinic announces the Association of Dr. M. V. Dardin in the practice of obstetrics and gynecology.

The Long, Dees and Edwards Clinic announces the association of Samuel Fred Carr, M. D., for general practice. 775 North State Street, Jackson, Mississippi.

L. Henning Mayfield, M.D., announces the removal of his office to 20 South Dudley Street, Memphis, Tennessee. Practice limited to proctology.

Bland W. Cannon, M.D., and Sam E. Hunter, M.D., announce the removal of their offices for the practice of neurosurgery to Suite 402-B, 20 South Dudley, Memphis, Tennessee.

Raymond F. Mayer, M.D., and Gordon L. Mathes, M.D., urology-surgery, announce the removal of their offices to Suite 203B Baptist Medical Building, 20 South Dudley Street, (directly east of the Baptist Memorial Hospital), Memphis 4, Tennessee.

AN INVITATION: To a doctor interested in general practice to visit JEFFERSONVILLE, TWIGGS COUNTY, GEORGIA. New nine-room office, and new five-room residence, rent free for six months. Contact H. C. Swearingen, Jeffersonville, Georgia. Phone 2192.

DEATHS

DR. L. E. MILLER

Dr. Luther Edwin Miller died September 29 of a heart ailment at his home in Newton.

Dr. and Mrs. Miller and two children, Melissa, age two years, and Gregg, age 10 weeks, had moved to Newton July 10. Dr. Miller had begun his practice at his new office in the Feldman Building, across from the Newton Hospital.

Dr. Miller was a graduate of E. C. J. C., Decatur, received his B. S. degree from Millsaps College, Jackson, and his M.D. degree from Vanderbilt, Nashville, Tenn., in 1954. He served his internship at Greenville General Hospital in Greenville, S. C., after which he was with the U. S. Air Force stationed in Waco, Texas, for two years.

Dr. Miller went to Newton from Laird Hospital, Inc., in Union, where he was associated with Dr. Earl Laird, Dr. John Laird, and Dr. W. R. Peebles for one year. He is the son of Mr. and Mrs. Andy Miller of Decatur. He was a member of the Baptist church.

DR. M. W. COKE

The body of Dr. M. W. Coke, physician at Ellisville State School who died October 21, was sent to Dallas, Texas, where final rites were held.

Dr. Coke, 59, was stricken the day before he died following his rounds at the school. His condition grew worse in the night, and he died a few hours later.

W. L. Jolly, school director, said Ellisville physicians and the South Mississippi Charity Hospital staff at Laurel will handle emergency cases at the school until a successor to Dr. Coke can be named.

Dr. Coke is survived by his wife, a daughter, and two brothers.

Dr. Coke received his medical education at Baylor University School of Medicine, Houston, Texas, where he was graduated in 1921 and interned in Baylor Hospital. He moved to Mississippi in 1958.

Recent Advances In Surgery: Gastro-Intestinal, Biliary, and Pancreatic Conditions*

JAMES D. HARDY, M.D., F.A.C.S.†
Jackson, Miss.

Many new and old problems in surgery have been examined or re-examined during this week of the Congress. My assignment has been to monitor the sessions dealing with gastro-intestinal, biliary, and pancreatic conditions and to summarize for you what I consider to be the points of major interest and importance. At the outset it should be emphasized, first, that by no means all significant material can be covered; second, that others might not agree with the choice of material to be presented; and third, that advances in our knowledge in the fields under consideration here are more likely to take the form of steady yearly progress than to represent spectacular break-throughs such as the cardiac field has enjoyed in recent years. Nevertheless, many notable increments in our knowledge of gastro-intestinal and biliary-pancreatic conditions have been achieved during the past twelve months.

THE GASTRO-INTESTINAL TRACT

Esophagus

Beginning with the esophagus, Marchetta and his associates have demonstrated *spontaneous regeneration* and *tubulation* of an open strip of esophageal wall to form a functional esophagus. Three-fourths or more of the cervical esophagus was removed, leaving a posterior strip of esophageal wall 1 cm. in width and 9 cm. in length. No attempt was made to reconstruct or to close the operative defect in the organ. The neck was drained and gastrostomy was performed. Healing of the neck wound and tubulation of the esophagus were complete by the 15th day, and the animals were able to maintain themselves thereafter by their own ingestation of food. This finding has obvious implications in the management of certain esophageal defects.

Seidenberg and Hurwitt have repeated and perhaps extended earlier work of Longmire in the *immediate reconstruction of the cervical esophagus with a revascularized isolated jejunal segment.* They sutured the mesenteric vein and artery to the anterior artery, respectively. Very fine (0000000) arterial silk sutures were used and the venous anastomosis was performed over a tantalum ring prosthesis. This work, too, bears upon the important problem of bridging the cervical esophagus, when required.

Stomach

Coming to the stomach, Salmon and his associates at Minnesota have reported data which provide a possible explanation for the higher rate of recurrent ulceration that follows the Billroth I operation in some series, as compared to the Billroth II. Catheters were placed in the duodenum following the Billroth I procedure and in the jejunum distal to the anastomosis in the Billroth II; it was found that the pH of the upper duodenal contents following the Billroth I gastrectomy was consistently low and closely paralleled the gastric pH value. Moreover, following stimulation by histamine or food the gastric pH decreased to 1.0 to 1.8 and the pH of the duodenal contents fell to values of 1.6 to 3.5. In contrast, after the Billroth II operation the jejunal pH values were constantly higher than those in the stomach, and they reached values as low as 3.0. It was concluded that the higher recurrence rate following the Billroth I is probably referable largely to this lack of protection of the duodenum from unbuffered acid gastric contents.

Genetic factors in duodenal ulcer are implied in the report of the Buckwalters. They find that persons with the blood type O have more than a 50 per cent greater chance of developing duodenal ulcer than those of the three other major blood types. In contrast, gastric carcinoma is more common in patients with type A than in those with type O. This is also true of pernicious anemia. Just what the ultimate validity or clinical significance of such observations will be remains to be seen. However, the idea, previously reported elsewhere, does afford a new point of departure in the investigation of various diseases. As for the increased incidence of duodenal ulcer in type O patients, the Buckwalters suggest a protective role of saliva, but they point out that more basic immunologic mechanisms may well be involved.

The *dumping syndrome* continues to be studied by many workers. Most now believe that, regardless of mechanisms, the primary fault lies in the fact that ingested food enters the small bowel too rapidly—before the usual alterations by gastric juice have occurred and have been followed by gradual passage of chyme through the normal pylorus in small amounts. There is, further, good evidence that the plasma volume decreases during the dumping phase and that this may explain some of the weakness which develops.

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*An address summarizing certain of the highlights of the 44th Annual Clinical Congress of the American College of Surgeons. Delivered in Chicago, October 10, 1958. Most of the material referred to will be published in Surgical Forum, Vol. IX, 1959.

†Professor and Chairman and Director of Surgical Research, Department of Surgery, and Surgeon-in-Chief to the University Hospital, University of Mississippi Medical Center, Jackson, Miss.

As for measures which may be employed to reduce the incidence and the severity of the dumping syndrome, the following are supported by types of evidence of varying significance:

1. The larger the gastric pouch, the less the severity of the dumping syndrome, in general. Hence, vagotomy with hemigastrectomy is becoming more popular.
2. A small-sized stoma appears to be desirable.
3. The limitation of fluid intake with meals has a beneficial effect.
4. A brief period in the reclining position following the meal may be helpful.
5. *Hypnosis.* This has proved effective at Minnesota and it is in line with data reported from Boston to the effect that "dumpers" may have an unstable autonomic nervous system, as indicated by an increased sensitivity of their blood pressure to tilting on the tilt table.

Intestine

Passing on to the intestine, it has been re-emphasized by McPhail and his associates that propulsive intestinal activity is usually present postoperatively and may persist in the absence of bowel sounds. By placing either a radioopaque marker or barium in the upper gastro-intestinal tract at the end of surgery, it was shown that the markers had frequently progressed to the ileum in 4 hours, despite an absence of bowel sounds.

Perlman and Cole, of Western Reserve, report a smooth muscle stimulating substance released from the intestine following acute arterial occlusion. This was also found by Turner and Neely, who studied the effect of arterial occlusion as compared with venous occlusion on intestinal blood flow. Venous occlusion was much more detrimental, and this points up the hazard of occlusion of the mesenteric veins by thrombus or other means.

The cause of death in strangulation intestinal obstruction remains a matter of the greatest concern. More and more, it is clear that enteric bacteria have a or the major part in this. In further pursuing this problem Barnett and Turner have shown the following:

1. High speed centrifugation of the toxic dark fluid from strangulated bowel results in a non-toxic supernatant. This would appear to rule out an exotoxin or even a free endotoxin as the cause.
2. Raw fluid passed through a Seitz filter is non-toxic, presumably because bacteria (but not a toxin) were filtered out.
3. Neomycin placed in the toxic fluid renders it non-toxic, presumably not by destroying any toxin present but by killing live bacteria and in preventing their multiplication.

Thus, the invasion of the blood stream and the multiplication of living bacteria, especially coliform and streptococci, would seem to be a major consideration.

As we leave the intestine, passing mention may be made of the malignancy of *carcinoids* of the G. I. tract or elsewhere, whether producing serotoxin crisis or not. The excellent exhibit by Wilson and Storer (of Memphis) is proof enough of the malignancy of these tumors, if any further proof were needed.

THE LIVER AND BILIARY TRACT

In an exhibit Kulick and Rousselot (St. Vincent's Hospital, NYC) have pointed out that cirrhosis of the liver is one of the 10 leading causes of death in the United States and, between the ages of 45 and 64, it is outranked only by heart disease, cancer, and cerebral hemorrhage. From 30 to 50 per cent or more of patients with bleeding gastro-esophageal varices die as a result of the initial hemorrhage. Kulick and Rousselot offer a combined pressure control and signal apparatus for the safer use of the balloons in the esophagus and stomach.

In another exhibit Najarian, Harper and McCorkle (U. C., San Frincisco) have again examined the role of ammonia, derived from nitrogenous digestion (including that from blood in the bowel of the patient), in the genesis of hepatic coma. An important part of this syndrome appears to be due to the increased blood ammonia levels which result from the fact that the diseased liver cannot synthesize urea from ammonia with sufficient rapidity. Thus, the bleeding cirrhotic patient should have the bowel cleansed of blood with enemas and saline cathartics, and neomycin or streptomycin should be given orally to reduce the formation of ammonia by bacteria in the bowel.

Liver function tests have come under scrutiny at this session. It is reaffirmed that intense effort over the years to find precise tests with which to differentiate medical from surgical jaundice has not produced a test equal to the value of a careful history and a physical examination which includes inspection of the stool by the physician himself. Of the tests available, the alkaline phosphatase level is perhaps the most useful single laboratory measurement to be used in distinguish-ing obstructive from non-obstructive jaundice.

The *role of stasis in the formation of gallbladder stones* has been investigated by the Minnesota group. Last year they reported that stricture of the lower end of the common bile duct resulted in the formation of stones, and this year obstruction of the cystic duct in animals is reported to result in gallbladder stones. In addition, in 20 autopsies of patients with stones of the gallbladder, 10 had partial obstruction of the cystic duct and distention of the gallbladder, as well as stones.

THE PANCREAS

Inasmuch as certain diseases of the pancreas are closely related to those of the biliary tract—so much so that the title "*the biliary tract and pancreas*" now frequently indicates a functional unit—a few important reports will be cited.

In careful studies Frazer, Anlyan, and Isley at Duke have investigated the amount of pancreatic tissue necessary to maintain normal exocrine function in the dog. In each dog the extent of pancreatic deficiency was estimated by following the weight curves and the absorption of I^{131} labeled fat products. This test has been shown previously to be a good indicator of pancreatic exocrine (as contrasted with endocrine) function. Ten per cent of the pancreas was found to be sufficient to maintain normal exocrine function. This has obvious importance in the current re-evaluation of radical, partial and total pancreatectomy for the management of chronic relapsing pancreatitis.

And having mentioned *chronic relapsing pancreatitis*, I would like to mention the major points presented in the exhibit by Howard, Ehrlich, and Stallings (Hahnemann). In essence they re-emphasize that in charity hospitals one-third of the patients with pancreatitis are alcoholics, one-third have gallstones, and one-third have neither an alcoholic history nor gallstones. Alcoholic pancreatitis eventuates in pancreatic calcification in almost one-half of the patients. These sequelae are rare in the gallstone group and in this group the results of biliary surgery are far superior, from the point of view of preventing further attacks.

The role of trypsin and of bile salts in the pathogenesis of acute pancreatitis was re-examined by Elliott, Williams and Zollinger at Ohio State. The relative importance of trypsin, as compared with bile salts, was particularly noted. In essence, these workers devised a reproducible method for causing experimental pancreatitis. Their results support the common channel theory of Opie. We know, of course, that pancreatic ducts or the ampulla can be occluded by spasm, fibrotic stricture, or stones. These workers also evaluated the use of cortisone in the treatment of experimental pancreatitis. They concluded that it was not needed except in the presence of adrenal disease *per se* and that, moreover, peptic ulceration was frequently produced in their dogs by this drug.

Menguy and DuVal found that *pancreatectomy* provided almost complete protection against gastric ulceration in the Shay rat. This finding is of particular interest in view of the association of certain islet cell tumors with a quite malignant peptic ulcer diathesis—the "ulcerogenic tumor" of the pancreas reported by Zollinger and Ellison.

ASCITIC CONDITIONS

Lastly, the problem of the management of ascites has been studied by several groups. Wilson and Child of Boston University demonstrated resorption of experimental ascites in the dog by ileoperitoneopexy. A loop of ileum was turned inside-out and sutured serosa to parietal peritoneum, to maintain exposed surface area. Less mucus accrued than from previously used colon loops. The continuity of the bowel was, of course, re-established by anastomosis.

Lee, of Pittsburgh University, used the "rectus wick" operation for the reabsorption of experimental ascites. A "bucket handle" of rectus muscle was left intact at each end and was implanted in the peritoneal cavity. In all 12 animals subjected to the modified rectus wick operation the experimental ascites produced by constriction of the inferior vena cava was controlled; all control animals were dead within 6 months, whether from marked ascites or from liver failure.

Finally, Enquist and his associates at New York State University have re-examined the thesis that ascites is derived from hepatic lymph as the liver "sweats" fluid. They placed the livers of dogs in the pleural cavity, closing the diaphragm beneath this organ. The inferior vena cava was then constricted three weeks later. The animals developed pleural fluid but no ascites.

These authors mentioned the fact that they were doing venous shunt operations for the management of ascites as well as for the management of bleeding, in portal hypertension, and others in the United States are again examining the feasibility of this operation for the control of ascites.

SUMMARY

A variety of problems in surgery have been touched upon, and efforts to solve them presented. The spectacular reapproachment between surgery and the basic disciplines, so notable in recent years, continues to flourish. It is gratifying indeed to find an increasing number of chemists and physiologists giving papers before this college. Such cross fertilization, which is already reflected in much of the work has been reported here, should be encouraged by every means available.

The Public Health Laboratory Service*

H. C. RICKS, M.D., M.P.H., F.A.S.C.P.
Jackson, Miss.

Before a public health laboratory service is established, it is well first to obtain a clear picture of the nature and extent of the infectious and communicable diseases, and the degenerative diseases which require laboratory services for their diagnosis and control. In addition a clear picture of the availability, quantity and quality of local laboratory service should be obtained.

The Public Health Laboratory of the Mississippi State Board of Health has the distinction of being the oldest division of the State Board of Health. It was established in 1910 for the purpose of rendering laboratory service for the diagnosis of tuberculosis.

Robert Koch of Germany had just twenty-eight years before this discovered and described the "tubercle bacillus," the cause of tuberculosis. Just two years previously in 1908 Doctor Koch and Doctor Edward L. Trudeau had met in Washington at the International Tuberculosis Congress, at which time Trudeau reported his confirmation of Koch's experiments and reported his success in treating the disease by bed rest, nourishing food and fresh air and "his theory of prevention by the same prescription."

In the United States the main organizational features of a public health laboratory service are generally a central laboratory which acts as the parent institution and is the administrative headquarters and reference laboratory; district laboratories and mobile laboratories performing examinations of specimens which cannot be sent with laboratory, not being an administrative unit except efficiency to the district or central laboratory. The for the personnel employed in the laboratory, must depend on the intelligent cooperation of the field public health personnel and the medical profession of the area if efficient and dependable laboratory service is to be rendered in the diagnosis of conditions for which laboratory services are needed.

It must be remembered that the results of a laboratory examination are no better than the specimen submitted for examination. For this reason it is imperative that the public health laboratory have and make available to the medical profession, hospitals, and field public health personnel containers satisfactory for collecting specimens to be sent to the laboratory. Information in detail must accompany each container to insure proper collection, packaging and delivery of the specimen if dependable results are to be expected.

To render efficient public health laboratory service, a capable epidemiological service to work in conjunction with or as a part of the laboratory service must be established in symbiosis with the laboratory service.

The extent and type of laboratory service required of a public health laboratory will depend on several factors. (1) The economic and cultural development of the area to be served. (2) The attitudes of the private medical and public health population to each other. (3) The training and availability of private medical and public health personnel. (4) The availability and competency of local private clinic and hospital laboratory facilities. (5) The training, competence, and efficiency of the public health laboratory personnel. (6) The attitude of the laboratory administrator toward his medical colleagues and his enthusiasm for rendering laboratory service to the population served by the laboratory. (7) The capabilities and attitudes of public health field personnel serving the area.

Objective of the Public Health Laboratory Program:

The objective of the Public Health Laboratory is: (1) To assist district and mobile public health laboratories in providing efficient laboratory service to the area served. (2) To provide supervisory services to district and mobile public health laboratories to insure capable and efficient personnel. (3) To approve recognized reagents, procedures, and equipment for each public health laboratory to insure dependable results. (4) To provide leadership for workshops for local public Health laboratory personnel and local private clinical and hospital laboratories.

Approach:

The accomplishment of these objectives may be approached by providing laboratory assistance to:

1. The physicians of the state.
2. Consultative or advisory service to local private or hospital laboratories.
3. The local health departments and other administrative divisions of the State Board of Health and other governmental agencies requiring such service.

Program of Diagnostic Assistance:

I. The Problem.

The control of communicable disease, be it in the individual or in the masses, is predicated upon definitive knowledge of the infecting agent and its ecology, and the epidemiology of the disease process. Although the incidence of disease has in certain instances been reduced, a considerable amount of infectious disease still exists. A poignant illustration of this public health responsibility is the reemergence of antibiotic resistant pathogenic strains of bacterial organisms in our hospitals. Your Public Health Laboratory can and should serve the professional staff and hospital management, where desired, in assisting actively in the identification of organisms involved, probable source of origin, and likely channels of transmission. An efficient approach to the control of these diseases from a laboratory standpoint requires two types of diagnostic facilities:

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*Read before the Section on Preventive Medicine, Mississippi State Medical Association, May, 1958.

(a) The establishment and availability of current efficient routine diagnostic facilities locally, privately preferred, for the diagnosis of individual cases of a disease which may be occurring sporadically or in increased numbers in a community or state.

(b) The establishment of efficient public diagnostic facilities necessary to recognize and identify the more rare diseases which occur infrequently enough to make it expensive and in some instances almost impossible to maintain competency at the local levels for proper recognition of these diseases. Where local facilities are not available, to render routine laboratory diagnostic service to individual cases through the family physician.

While there has been obvious improvement in the efficiency and the extent of diagnostic coverage in respective clinic and hospital laboratories during the last one or two decades there still exists in many of these laboratories areas of incomplete coverage and of deficiency in the quality of diagnostic services rendered. The same conditions prevail to some extent in the public health laboratories. These deficiencies may be met by the public health laboratory. When the Central Public Health Laboratory cannot meet the need reference laboratories of the U. S. Public Health Service may be used to fill the need.

II. The Public Health Laboratory Program for Development of Diagnostic Competency.

The development of increased diagnostic facilities by the Mississippi Public Health Laboratory was stimulated by the State Hill-Burton Hospital Program which developed a need for additional trained technicians and additional training for those already employed. In 1941 two well trained technicians were employed for the purpose of rendering advisory service to local clinic and hospital laboratories throughout the state. General medical microbiology including parasitology, syphilis serology and general blood chemistry, basal metabolism, x-ray technics, and operation of the electrocardiograph were covered in the advisory services. At the time this service was initiated there was one AMA approved school for training medical technologists in the state. This program was continued through 1953 when for lack of funds it was discontinued. Since the initiation of this program three additional schools of medical technology have been organized within the state and approved for training technologists. The University of Mississippi, Mississippi State College and Delta State College have each established special pre-clinical laboratory courses of instruction and now award degrees of Bachelor of Science after completion of three academic years of approved instruction and in addition 12 months of continuous instruction in an approved school of medical technology.

Since the discontinuance of the advisory service priority has been given to short courses of a few days' duration in syphilis serology and serologic diagnosis of the fungus diseases.

In the laboratory diagnosis of disease there are many divisions of activity. Let's consider them as we know them today. First, let's consider those due to bacteria and molds or fungi. The activities of this section up to the present have held number one priority in the Division of Laboratories for the following reasons:

1. The bacterial and fungus diseases represent the largest group of infectious and communicable diseases which require identification for their treatment and control.

2. While many hospital and clinic laboratories accept specimens for identification of the more common bacterial disease there is a group of bacterial and fungus diseases which occur relatively infrequently and require specially trained personnel to perform the diagnostic procedures, and also require special diagnostic agents and special competency in the preparation of these agents. These special agents are not available through commercial sources so the local hospital and clinic laboratory must depend on the services of the public health laboratory for consultative diagnostic service. When these services are not available in the Public Health Laboratory the laboratories of the U. S. Public Health Service are available to the Public Health Laboratory.

Blood tests for the diagnosis of syphilis, volume-wise, provide more specimens than all other sections of the laboratory combined. The processing of these specimens lends itself to volume production for the reason that the reactions of these specimens can be determined within hours, as compared with bacterial and fungus specimens which sometimes require weeks for a reliable result to be obtained. Most hospital and clinic laboratories now have facilities for performing dependable blood tests for syphilis.

Parasitology:

Diseases caused by parasites still quite prevalent in the southern section of the United States are a real problem of public health importance in some areas. This applies especially to hookworm infestation in those areas where children and others prefer to go barefoot or wear sandals in the summer, and where home sanitation as related to excreta disposal is neglected. Most hospitals and clinic laboratories have facilities for making a reliable examination for hookworm, however, there are other parasites which occur less frequently which require technicians of much better training and skill for their recognition. This service should be available to all hospitals, clinics and physicians through the public health laboratory.

Water analysis is of the highest importance to all of us. Based on the number of people affected, this section should probably be considered as a number one activity for the following reasons: 1. Each school is required to provide a safe water supply to obtain approval. 2. Each incorporated community is required to provide a safe water supply for its citizens. 3. The U. S. Public Health Service requires all interstate carriers providing drinking water for their passengers or dining car service to provide a safe water supply. The Public Health Laboratory is the approved agency for determining the sanitary quality of these water supplies by laboratory methods as required by the U. S. Public Health Service, the State Health Departments and other governmental agencies.

Have you ever wondered why you can trust the milk you buy at the grocery store as being safe for you and your family to drink? This activity just as water analysis, may be considered a number one activity of the public health laboratory when considering its potential effect on the general population. In most communities Grade A milk only is permitted to be sold. The State Department of Education requires Grade A, pasteurized milk for all lunch rooms in schools. The states to which Mississippi exports milk require Grade A as a minimum standard. All of this milk must be examined by the public health laboratories to determine the sanitary quality as it comes from the dairy farms and after pasteurization.

Rickettsial and Viral Diseases:

Rabies in animals probably causes more anxiety on the part of people than all other laboratory activities. While it is not now the problem it once was, there is no reason to feel secure. Dogs still should be vaccinated annually. Foxes are a constant threat and will sooner or later cause an extensive outbreak of rabies in the livestock population. Better laws and enforcement will increase our service capabilities in this connection.

Diseases of viral and similar origin such as rat fleas, ticks, lice, birds, dogs, and personal contact with human cases are at present much in the public health laboratory in the not distant future. The inability to culture viruses by ordinary methods and the necessity for using large numbers of small animals, such as chickens, ducks, frogs, rats, mice, monkeys, and others cause the laboratory diagnosis of these conditions to be extremely expensive, time consuming and to require a high degree of professional skill. A dearth of trained virologists exists throughout the country, so it is difficult to render this type of complete diagnostic service even in the Public Health Laboratory. Access to the laboratories of the U. S. Public Health Service is helping to solve problems in this field. Personnel is being sought, employed and trained so that this type of service on a limited basis can be made available.

Degenerative Diseases:

The development of a program for cytological examinations as a screening procedure is a field that may call for Public Health Laboratory participation. Private laboratories should be developed to meet the demands of the medical profession for immediate laboratory service in the diagnosis of cancer of the cervix and vagina. A mass screening program for detection of elevated blood glucose is another field for which the Public Health Laboratory may be responsible. The final diagnosis and management of these diseases should be left to the private physician and hospital.

The control of the sanitary quality of the shellfish sold to the public is a responsibility of the Public Health Laboratory which may not be delegated to others. Also the examination of sea water from which the shellfish is harvested to determine its sanitary quality is a responsibility of the Public Health Laboratory.

All of these activities require adequate and well trained staff people. If the Public Health Laboratory is to render the service usually expected of it in the light of the present public health program more funds must be made available. Workshops for training local private and hospital laboratory people and for refresher courses for Public Health Laboratory personnel showing evidence of genuine interest in improving themselves in their respective fields of work. Advisory clinical laboratory service to clinic and hospital laboratories is an essential activity.

The Public Health Laboratory must maintain a strict ethical relationship to the medical profession and public health departments if it is to function properly. Specimens should always be collected and submitted by a physician or a representative of the public health department. Reports should be delivered only to the physician submitting the specimen unless he requests, in writing, that it be delivered to another. Telephone reports should be discouraged. Reports of results where infectious and contagious diseases are concerned should be delivered to the Epidemiology Division of the health department responsible for making investigations of such conditions to insure proper compliance by the medical profession and the local health personnel with official regulations governing the control of such diseases.

SUMMARY

1. Public Health Laboratory service is essential, a vital link between the public health responsibility and the private practice of medicine.

2. While the routine day to day fundamental laboratory activities will continue as a useful service, the ultimate maximum effectiveness and usefulness of this scientific arm can be expected to depend upon the boldness of imagination and ingenuity of application by practitioners in public health and private medicine.

Your public health laboratory service recognizes that new and dynamic problems will challenge us in the future. These problems will be met on a basis of demonstrated necessity within the framework of scientific capability, adequacy of diagnostic tools and facilities, and the willingness of appropriate authority to provide needed financial support.

Discussion by William P. Featherston, M. D.

A very careful study of this paper reveals very little criticism of the points Dr. Ricks has made. Therefore, corollary points will be made. It is obvious that a state board of health lab is essential for study and control of public health problems. The great difficulty as I see it is where the boundary line between public health and private health lies. Often times it meanders from one side to another and in some instances fades out completely.

So the crux of the problem really lies in defining the provinces of public health. We recognize that many diseases could run rampant throughout this land were it not for the vigilance of our public health services. Malaria, at one time, created a medical and economic burden of a serious degree upon this state. The Public Health Department of Mississippi by the joint endeavor of epidemiologists, sanitation engineers, and the diagnostic services of the hygienic laboratory has completely eradicated this disease. It has done such a good job in fact that the medical student of today doesn't even see a case and the only laboratory specimens he can study are gradually fading away to the point where these specimens are not even diagnostic anymore. As a byproduct we don't even think about yellow fever as being a scourge as it was up until almost the beginning of the twentieth century.

Other diseases such as typhoid fever are becoming rarer due to the rigid controls of food handlers, diagnostic cultural and identification procedures employed in our modern State Hygienic Laboratory. The State Health Department has been recently active in promoting a program of immunization against poliomyelitis and even more recently Asiatic influenza. These last two programs are evidence of the cooperation between the public health agency and private physicians.

There is only one phase of Dr. Ricks' paper to which I would really like to devote serious comment, and that is the section on the extent and type of laboratory service rendered by a public health laboratory. Here we really get into the area of nebulous boundaries. The first factor Dr. Ricks mentions is the economic and cultural development of the area to be served. Here is a paradox. In comparing the economic status of Mississippi and Massachusetts (the first state actually to establish a department of public health) I shall have to admit that our state suffers somewhat by comparison. Yet I can easily indulge in that favorite political pastime of pointing with pride and challenging anyone to say either our culture or the State Board of Public Health is second rate. The economic aspect then is one of the main reasons determining the extent and type of service offered by the public health laboratory. Contributory factors of only slightly less importance are the availability and competency of local private clinic and hospital facilities and the attitude of the laboratory administrator towards his medical colleagues and his enthusiasm for rendering laboratory service.

If the patient of a private physician is medically indigent (and this is a very loose term) and if laboratory work is indicated, one of the first places the doctor considers to do it is the State Hygienic Laboratory. It is attractive because the physician knows neither he nor the patient will be billed for payment. The irritating factors manifest in this type of reasoning is that oftentimes there is really no public health problem in this situation. More tragic in my opinion is the situation when the physician requests a laboratory examination of the State Hygienic Laboratory to be performed on a patient who is not medically indigent for the same reason that it is free even when there is a competent private laboratory service available. In this situation we are seeing a man dedicated to the proposition that socialized medicine is wrong yet unknowingly he is propagating it. For one thing is definite: there is nothing free in this world. It must be paid for by someone. Although the patient doesn't receive an itemized statement, he does pay the bill, and you help him, and so do I.

Therefore, I believe we each can determine the goals of public health by simply utilizing the services which properly belong to the province of public health. As long as Dr. Ricks heads this branch of the State Board of Health, I think he will run it that way. I am certain that he is establishing a precedent for his future successor in the distant future, I hope. I am equally certain his example will demand quite a man.

Recent Status of the Management of Hyperthyroidism

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The goal of every surgeon and every surgical procedure, is a patient, well and happy, from whom a lesion has been removed or a reconstruction accomplished, without undue pain and complicating sequelae. Any adjunct to the accomplishment of this goal is worthy of consideration. The recent advances in surgical armamentarium are well known and redundant of enumeration. The one I am about to discuss briefly is a controversial one, and by many thought to be a useless one. However, when one considers the miseries imposed upon the woman with operatively induced uropathies, and when one considers that in the hands of the most excellent surgeons, these operatively induced uropathies do occur, then the adjunct to be discussed does not seem insignificant. This adjunct to which I refer is the routine use of ureteral catheters in *major* gynecologic surgery.

There are two principal reasons for placing catheters in the ureters prior to major gynecologic surgery. One is the remarkably increased ease with which the ureters may be identified and kept free of crushing clamps and encircling sutures; the other is the tremendous aid offered by the presence of the indwelling catheter in repairing any inadvertent damage which may be done.

How blessed is the surgeon who knows accurately the identity and whereabouts of the structures, upon which he is operating! Yet, highly competent surgeons may fumble away thirty or more minutes striving to identify a ureter. It is a small and elusive organ, and to the gloved finger, feels remarkably like a blood vessel. Of course, it does not pulsate, but is close to pelvic arteries that do, and one may easily get the impression that the structure in question is pulsating. This sometimes fruitless search is obviated by the presence of catheters in the ureters.

Recent trends in gynecologic surgery make an accurate knowledge of the position of the ureters even more desirable than formerly. In particular is referred to the tendency to do total hysterectomies for both benign and malignant disease. Then too, massive neoplasms of the uterus, broad ligaments or ovaries, severe endometriosis, especially that of long standing, and inflammatory disease, may cause marked displacement of the ureter from its normal position. The presence of catheters allows the surgeon to be more radical in his ablation and excision of neoplasms, should an unsuspected malignancy be encountered at the time of operation.

Surgically induced uropathies are probably more common than is realized or recognized. The brevity of this paper precludes a comprehensive discussion of these distressing morbidities.

The ureteral injuries may be incurred by one or more of three mechanisms. The entire cross section of the ureter may be divided by a scalpel or crushed while clamping a vessel, (most often the uterine artery where it crosses the ureter); or the ureter may be included in the uterine artery ligature, partially or completely. A third type of injury is that termed "parietal injury" in which a portion of the ureteral wall is crushed with a clamp or included in a suture in such a manner as to cause necrosis with resultant leaking of urine[1].

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The injury usually occurs in one of four places, i.e., at the infundibulopelvic ligament, in the region of the uterine vessels, at any place between these points where an inflammatory or neoplastic mass is adherent to the ureter, or where the ureter lies between the anterior vaginal wall and the base of the bladder[2]. With the tendency to do more total hysterectomies, this latter site is becoming more commonly injured. Here, as in one case seen by the author, a catgut suture had been inserted through the corner of the vagina, the lumen of the right ureter and the wall of the bladder. On the eighth postoperative day, a trickle of urine from the vagina indicated the presence of a uretero-vesicovaginal fistula. In most total hysterectomies, this catastrophe may be avoided by carefully dissecting the bladder downward on the anterior vaginal wall: but, in the presence of dense scar tissue from any cause, previously placed ureteral catheters are of inestimable value. The same is true in the ligation of the uterine arteries. Should a clamp slip and hemorrhage ensue, with catheters in place, one may know whether or not he has damaged the ureter in the reclamping of the artery.

The symptoms of surgically induced uropathies not recognized at the time of operation will vary with the type and site of injury. If one tightly ligates a single ureter of a non-infected kidney, then neither surgeon nor patient will ever know it; the kidney quietly atrophies. If loose ligation is done, stricture formation ensues and with it, all the miserable symptoms of hydronephrosis. Should a fistula occur, the peritoneum may form a "false bladder"; or, if the urine is infected, generalized peritonitis may follow. The lower injuries may first manifest themselves as a urtero-or-vesico-vaginal fistula. Ligation or cutting of both ureters produces anuria. Any patient who has no bladder urine twelve hours after pelvic surgery should be cystoscoped and have catheters passed into the kidney pelves if possible.

Obviously, the best time to repair urinary tract damage is at the time it occurs. It is in this situation that previously placed ureteral catheters offer their greatest solace, for they aid greatly in the recognition of the type of injury and they are of great value in repairing the injury. A uretero-ureteral anastomosis is fairly easily accomplished over a catheter (the latter acting as a splint), but it is a difficult procedure without the catheter *in situ*. The same holds true for the re-implantation of the ureters into the bladder or colon as the case may be. A uretero-ureteral anastomosis should always be drained extraperitoneally.

Discussion of treatment of injuries not recognized at the time of operation is too involved to be discussed in a paper of this length.

In the last twenty-six major pelvic procedures done by the author, ureteral catheters have been placed in the ureters. The time required to do this varies from 12 to 18 minutes. For reasons outlined above, this few minutes extra time has more than paid for itself in the freedom from anxiety it affords.

The author's routine is as follows: After the patient is anesthetized, she is placed in the lithotomy position, prepared and draped. Cystoscopy is then performed with a Brown-Buerger cystoscope. The trigone, ureteral orifices, walls and dome of the bladder are quickly inspected. The catheters are then introduced in the routine manner. If there has been previous suspicion of kidney disease, specimens may be taken from each kidney. If the procedure is vaginal, then a change of gloves suffices and one may proceed. If the operation is abdominal, then redraping is done, after placing a bladder catheter.

Immediately after the completion of the operation, the catheters are withdrawn. There is usually a mild gross hematuria for ten to twelve hours following surgery.

In the author's cases, there have been no urinary tract complications following the use of indwelling ureteral catheters in pelvic surgery.

Many shall say that this is a redundant procedure, because surgically induced uropathies are relatively rare. Well, so is a slipped ligature tied with a square knot; but most of us throw a half-hitch upon the square knots!

In conclusion, it would seem imperative that every surgeon should familiarize himself with the use of a cystoscope and be prepared to place catheters in the ureters prior to pelvic surgery or postoperatively, should the need arise.

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Recent Advances in the Therapy of Systemic Fungus Infections*

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UNTIL TEN years ago systemic infections by fungi were generally regarded as medical curiosities. An important reason for this attitude arose from ignorance of the varied clinical forms of fungus infections since they had not been described in detail. As a result, deep mycotic infections were recognized infrequently and when diagnosed correctly, the disease was often far advanced. Another deterrent to the clinician was the lack of suitable laboratory diagnostic procedures. As an example, tests based on immunological principals were rudimentary at best and not widely available to the medical profession for extensive diagnostic use. Similarly, the paucity of adequate epidemiological data relevant to the incidence and distribution of these diseases did not alert physicians to their prevalence. Finally, since there was no effective therapy against fungus infections, a defeatist attitude often attended the diagnosis of systemic mycoses since they commonly eventuated in death. Within the last decade a significant break-through on each of the above points has generated wide interest in these diseases.

Extensive epidemiological studies have revealed the peculiar prevalence of histoplasmosis and coccidioidomycosis in well defined geographical areas of the United States. Coccidioidomycosis, for example, is sharply limited to the southwest and far west whereas histoplasmosis occurs throughout the country but is most prevalent along the basin of the Mississippi River, with a significant incidence in the state of Mississippi[1]. Very little is known of the country-wide epidemiology of the other major fungus infections although they are known to occur sporadically within Mississippi and must be regarded as endemic diseases. Thus, with the exception of coccidioidomycosis which is seen in Mississippi only as a result of out of state exposure, systemic fungus infections pose a very important diagnostic and therapeutic problem to physicians of this area. It will facilitate this discussion to deal with each disease separately.

HISTOPLASMOSIS

Largely as a result of the work of Christie[2], Furcolow[3], and Loosli[4], infections caused by *Histoplasma capsulatum* are better understood than diseases caused by the other major fungi.

TABLE A

Clinical Forms of Histoplasmosis.

1. Asymptomatic infections.
2. Acute pneumonic infections.
3. Chronic infections.
   a. Mucocutaneous
   b. Fibrocavitary
4. Progressive disseminated infections.

Residents of the lower Mississippi Valley display a high incidence of skin sensitivity to antigens of *Histoplasma capsulatum* ranging from a maximum of 80 per cent in parts of Missouri and Tennessee to a low of 12 per cent or less in southern Mississippi[5],[1]. Most skin reactors have calcific lesions of the lungs as shown by x-ray, negative skin tests for tuberculosis and no significant history of pulmonary disease. It has been surmised, therefore, that they have had an asymptomatic infection by *Histoplasma capsulatum;* numerically the commonest form of systemic fungus infection[2]. The acute pneumonic type of histoplasmosis is usually seen in small epidemics after exposure to high concentrations of the infectious mycelial phase of the organism. Intense exposure has occurred in damp, dusty basements, silos, and where chicken or pigeon manure has accumulated since these conditions favor growth of the organism. This infection resembles primary atypical pneumonia and is of limited duration with recovery the rule[6].

Chronic infections by *Histoplasma captulatum* involving either the oral cavity or parenchyma of the lung were confused in the past with either neoplastic or tuberculous lesions. In particular, cavitary lesions of the lung resembling tuberculosis are now known to occur in histoplasmosis[7]. The progressive disseminated form of the disease develops at the extremes of age but is most common in infants. It probably represents progression of a primary infection and has been invariably fatal until recently. This form of the disease presents as a febrile illness with leucopenia, anemia, and enlargement of the lymph nodes, spleen and liver. Vesicular lesions of the skin containing numerous organisms in the yeast phase occur commonly.

THERAPY. Before 1956 treatment of progressive histoplasmosis, i. e. chronic pulmonary, mucocutaneous and disseminated infections, was disappointing. Many agents known to exert an antifungal effect *in vitro* were tried in experimental and human infections with poor results. Recently considerable benefit has been achieved with two types of treatment. First, although sulfonamides have been used unsuccessfully in the past, they have been recently shown to modify both the mucocutaneous and disseminated forms of histoplasmosis when used for a long time[8]. The sulfonamide should be given at a sufficient dosage to achieve blood levels of 10 to 20 milligrams per cent. As an example, four to six grams of sulfadiazine daily should achieve levels of this order in the adult. Second, amphotericin B, an antibiotic derived from a strain of *Streptomyces*, has been shown to arrest both experimental and human infections. Available as Fungizone, amphotericin B has now been reported as useful in treatment of all symptomatic forms of histoplasmosis. From data available it is apparent that successful therapy with amphotericin B depends largely upon establishing the correct diagnosis early in the infection since failures have occurred in patients terminally ill. Amphotericin B should be administered intravenously or intramuscularly on a daily schedule for periods of months in order to achieve ideal results. Treatment is usually begun at a dosage of 0.25 milligrams per kilogram of body weight each 24 hours. This should be increased gradually to reach a maximum of 1.0 to 1.5 milligrams per kilogram daily. Administration of amphotericin B in an intravenous infusion of five per cent dextrose[9], should be prolonged over a six-hour period to minimize toxic reactions. Undesirable reactions to amphotericin B in the form of chills, fever, hypotension and azotemia are of sufficient severity to require initiation of treatment under hospital conditions although they may be controlled with salicylates and antihistamines. It is probable that amphotericin B and sulfonamide therapy should be used together in treating clinical histoplasmosis although this has not been definitely shown. Sufficient experience will probably be gained in the next year or so to define precisely the most desirable therapeutic program.

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BLASTOMYCOSIS

North American blastomycosis occurs sporadically throughout the United States with greatest prevalence in the southeast. Although one epidemic in a rural family has been reported from North Carolina, little is known of the epidemiology and pathogenesis in humans[10]. There are two distinct clinical forms of blastomycosis. The first, a primary cutaneous infection, is extremely rare since it occurs only after direct innoculation of infectious material beneath the skin. Several cases of accidental innoculation have been reported but this is not the common form of the disease[11]. Disseminated infection, however, frequently resembles primary cutaneous blastomycosis since skin lesions may occur secondarily to a primary focus in the lungs. The pulmonary infection is believed to develop after the mycelial phase of the fungus has been inhaled. The organisms then proliferate in the yeast phase with subsequent spread to all parts of the body via the blood stream. Disseminated blastomycosis may produce a chronic indolent illness with spontaneous cures occasionally occurring. Generally the disease is progressive and may pursue an acute or subacute course with death ensuing after vital centers, such as the adrenal glands or central nervous system, have become involved[12].

The therapy of blastomycosis in the past has been difficult and has gone through many changes with the most successful program involving vaccines and iodides[12]. In 1950, the inhibitory effect of stilbamidine on experimental blastomycosis was first noted and was followed by its spectacular application to human infections[13]. Although stilbamidine was highly effective, the large amount required often damaged the fifth cranial nerve and resulted in severe facial pain. Subsequent search led to the development of 2-hydroxystilbamidine, an agent somewhat less effective than stilbamidine on a weight basis but much less toxic and safer to use. As a result, most cases of blastomycosis have been treated with 2-hydroxystilbamidine in recent years with highly encouraging results. 2-hydroxystilbamidine, 225 milligrams daily, is given intravenously for a total dosage of 9 to 12 grams. Most cases respond satisfactorily on such a program although a few relapses have been encountered. It is of interest that the response may be very slow with skin or pulmonary lesions still present at the time therapy has been completed. Follow-up has shown that the lesions eventually heal, probably a result of an accumulative action of drug stored in the tissues of the body. In the rare instance where infection has been refractory to the stilbamidine drugs, amphotericin B has proved to be highly effective. Amphotericin B has resulted in the prompt clearance of lesions in "resistant" infections in the few cases where it has been employed[14]. Experience with this antibiotic in the management of blastomycosis is still in an early stage but it appears to have considerable value as another potent drug for treatment of this serious infection. Resectional surgery in addition to drug therapy is occasionally required when fibrotic foci prevent successful medical management.

COCCIDIOIDOMYCOSIS

Therapy of coccidioidomycosis has been limited to cases with granulomatous disease or chronic infection since the acute infections are self limited and the majority heal spontaneously. No therapy had a consistently salutary effect on chronic coccidioidomycosis until amphotericin B became available. This antibiotic is a potent agent against *Coccidioides immitis* as indicated by early reports. A high percentage of patients have responded with arrest and clearing of the infection[9]. As in histoplasmosis and blastomycosis, the ideal duration of drug therapy has not been determined. Medical treatment should utilize surgical resection in selected cases.

CRYPTOCOCCOSIS

Infections caused by the fungus *Cryptococcus neoformans* occur sporadically in the United States and have been recognized in Mississippi. This organism produces a chronic, indolent infection of the skin and may gain access to the interior of the body via the respiratory route. Disseminated cryptococcosis is most common in patients with reduced resistance as in lymphomatous diseases, diabetes mellitus or as a result of extensive adrenal steroid therapy. Involvement of the central nervous system with a chronic meningitis is the most common clinical form of this infection. Although it has been uniformly fatal in the past, the course of cryptococcal meningitis is extremely variable since a few patients have survived for years without specific therapy.

The treatment of systemic cryptococcal infections has been unsuccessful in the past as evidenced by the many different agents tried in therapy[15]. Local lesions, however, have responded to surgical resection and to topical medical therapy[16]. For the first time, treatment prior to the terminal state with amphotericin B has resulted in arrest and cure of both local and systemic infections. As in the mycotic infections discussed previously, amphotericin B administration must be maintained for a period of at least two or three months in order to assure satisfactory results. Although the drug apparently reaches the central nervous system in sufficient concentration to inhibit growth of the fungus, amphotericin B has been given intrathecally without reaction in instances where the patient's condition has been critical[9]. With such a potent fungistatic agent, it becomes imperative for the clinician to establish the correct diagnosis early in the disease.

ACTINOMYCOSIS

Infections caused by the organism *Actinomyces bovis* may present as one of three distinct clinical entities. Cervico-facial infections may originate from the oral cavity, involve the mandible with formation of sinuses, and extend into the deep structures of the neck and upper chest. Pleuropulmonary infections may arise from foci in the parenchyma of the lung and burrow through the pleura to form draining sinuses of the chest wall. Abdominal infections may be encountered as a complication of a ruptured appendix with sinuses formed in the right lower abdominal quadrant and frequently with involvement of the bones of the pelvis.

Since the early 1940's, actinomycosis has been treated with the sulfonamides although prolonged treatment was necessary and even then failures were common. Properly timed surgical intervention aided medical management since ancient scars or sinuses served as active foci for an infectious relapse. A higher percentage of cures has been obtained with penicillin since the organism is usually quite sensitive. It has become apparent, however, that long term therapy of actinomycosis with penicillin is required before satisfactory clinical results may be obtained. Despite extensive clinical experience, neither the exact dosage that should be employed nor the total duration of therapy required have been firmly established. Most agree that a minimum of three months of treatment should be anticipated initially with therapy extended if the patient's progress has not been satisfactory. A conservative scheme for management of patients with actinomycosis should include at least 600,000 units of procaine penicillin intramuscularly daily until therapy has been concluded[17] Recently larger amounts of penicillin given intravenously, 10 to 12 million units daily, have been obtained. On such a schedule, usually after 14 to 21 days, the penicillin should be reduced to 1,200,000 units intramuscularly daily and continued for at least 12 months[18]. Such a program is obviously a difficult one for many patients to follow and in many instances compromises must be made. The tetracyclines have also been found useful in the management of actinomycosis but the expense involved has discouraged extensive clinical application. Surgical intervention during any medical program of treatment should be withheld until the infection has begun to respond to chemotherapy.

NOCARDIOSIS

Infections caused by *Nocardia Asteroides* were encountered infrequently in years past but better laboratory methods of diagnosis have resulted in recognition of more cases recently. This organism causes a destructive pulmonary infection similar to actinomycosis but may pursue a more fulminating course[19]. Formation of sinuses is a frequent event and metastatic foci sometimes develop after spread via the circulation. Differentiation of nocardiosis from actinomycosis may be difficult and requires a competent bacteriological laboratory.

The sulfonamides, particularly sulfadiazine, are the treatment of choice[20]. At least four grams of sulfadiazine should be given daily by mouth for three to six months to assure a prompt and sustained control of the disease. Surgical intervention may be necessary as in actinomycosis. Prompt and aggressive therapy will control this infection but many failures have resulted when diagnoses were made late in the infection.

MONILIASIS

Infections caused by *Candida albicans* occur primarily on epithelial surfaces. This organism exists symbiotically on the body surfaces and does not produce disease except under special conditions as present in diabetes mellitus, hyperparathyroidism, etc. Systemic dissemination by the blood stream is an uncommon event but may occur in patients with chronic illnesses, during intensive adrenal steroid therapy, or as a secondary complication of extensive antibiotic therapy. In the past, most infections of the skin and mucous membranes responded to therapy with the aniline dyes. However, *Candida albicans* infections of the tracheobronchial tree, the mucous membranes of the intestinal tract and urinary excretory system were more difficult to treat. In 1954 a new antibiotic, mycostatin, was found to exert an inhibitory effect on *Candida albicans* infections of experimental animals. Subsequent trial in human beings resulted in prompt control of infections if adequate concentrations of the drug could be achieved[21]. Since absorption from the gastrointestinal tract has been poor and since no preparation suitable for parental administration has been available, treatment of deep or systemic infections due to *Candida albicans* with mycostatin has been unsatisfactory. In a few instances it has been reported as effective in controlling infections of the urinary tract and lower respiratory tree. Fortunately, amphotericin B has been found effective in the control of systemic infections caused by *Candida albicans*. In this instance it has been found to be fungistatic with prolonged administration required for control of infection. It has been used successfully in endocarditis due to *Candida albicans* and in infections of the lungs and urinary tract[22].

SPOROTRICHOSIS

Infections caused by *Sporotrichum schenkii* are not commonly encountered but constitute a serious problem of diagnosis and management. This infection occurs sporadically throughout the United States and is commonly associated with contact of plants and other organic matter. The usual clinical infection is one of a primary lesion at the site of a skin abrasion followed by the development of subcutaneous abscesses along lymphatic channels draining the area. These lesions are frequently confused with streptococcal or staphylococcal infections but prove to be resistant to the usual treatment of bacterial abscesses. Eventually, involvement of regional lymph nodes may occur with dissemination of the fungus to other areas of the body. Fortunately, the latter complication is rare since a diagnosis by exclusion is generally made before the late stage of the disease is reached. There is no consistent pathological pattern to aid in establishing the diagnosis histologically. Proof of infection must be achieved bacteriologically since there are no satisfactory immunological tests. In the absence of bacteriological confirmation, a therapeutic trial may provide circumstantial proof of infection.

Successful treatment of sporotrichosis has been achieved by using potassium iodide in increasing increments until a dosage of 120 drops daily is reached. Therapy with iodides for one to three months has resulted in control of most infections with subcutaneous lesions. Surgical intervention is usually contraindicated except under exceptional circumstances. The systemic disease, however, has proved resistant to iodide therapy and has often resulted in death. There is evidence to suggest that 2-hydroxystilbamidines, amphotericin B, and Nepera 1968 are useful in management of disseminated infection although further trial is needed[23].

OTHER FUNGUS INFECTIONS

Infections caused by fungi recognized clinically as aspergillosis, mucormycosis, and geotrichosis are less commonly encountered. Great difficulty may be encountered in determining whether or not these organisms are actually responsible for given clinical problems. Although there is no doubt of an increasing incidence of these infections, there is no effective means of their control. A few cases have responded to one of the fungistatic agents mentioned previously but results in general have been discouraging.

SUMMARY

The major systemic fungus infections no longer present insurmountable therapeutic problems since potent fungistatic agents are available for control of these diseases. Of greatest promise is the new antibiotic amphotericin B which appears to qualify as a broad spectrum antifungal drug. The full extent of its usefulness remains to be determined. Mycostatin and 2-hydroxystilbamidine are active primarily against single infections but their value in medical therapy has been well substantiated. Surgical therapy is an important adjunct in the management of many of these problems and should be coordinated with the medical program.

Laboratory methods for making accurate diagnoses have been greatly expanded and are easily available to physicians through private and state installations. The accessibility of such facilities increases the responsibility of the medical profession for making prompt diagnoses since success of treatment not only hinges on the correctness of a diagnosis but also on making it before irreversible changes have occurred. Thus, the physician must remain constantly alert for these serious infections.

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SEVEN OUT OF TEN

A recent estimate, by the Health Insurance Council, says that seven Americans out of 10 carry the insurance, and will be paid $3 billion in claims this year. Here is the breakdown: 118 million people have hospital expense coverage; 103 million surgical expense, and 67 million have what is known as "regular" medical expense. There is also a very new form of insurance which protects against high cost, long duration illnesses of a catastrophic nature. And 10 million people now have this.

The outstanding success of voluntary health insurance, in all its branches, proves that there is no need in this country for compulsory government insurance—or a state-dominated medical system.

Recent Status of the Management of Hyperthyroidism

W. H. KISNER, M.D.*
Natchez, Miss.

There are three accepted methods for the treatment of hyperthyroidism today:

1) the antithyroid drugs
2) radioactive iodine
3) surgery

The antithyroid drugs, except in unusual instances, are used to prepare patients for surgery and also occasionally used prior to the use of radio active iodine.

Therefore, my discussion will be limited to an evaluation of the role of surgery in the treatment of hyperthyroidism and the relation of surgery to the use of radioiodine in the management of this condition.

There has been so much published about the use of radioiodine in the past few years, that it is well for us as surgeons to carefully evaluate these numerous reports.

Recent symposia with panels of surgeons, radiologists, and internists reveal a marked divergence of opinion on the subject of these two therapeutic procedures.

There is no question about the value of radioiodine. Since the introduction of radioiodine in 1941, a large number of cases have been treated throughout this country.

Let us first consider the treatment of primary hyperthyroidism. The advantages of radioiodine in the treatment of primary hyperthyroidism are:

1) a simple procedure
2) virtual absence of significant early complications
3) tetany of hypoparathyroidism has not been reported
4) absence of surgical complications, such as injury to one or both recurrent laryngeal nerves, postoperative hemorrhage, or postoperative hypoparathyroidism.
5) Relief from thyroid toxicosis is complete when a sufficient dose of radioiodine is given

In addition, I believe, it is a much cheaper means of treatment than surgery.

The disadvantages of radioiodine in the treatment of primary hyperthyroidism are:

1) Possible carcinogenic effect
2) A high incidence of permanent myxedema, according to Bell
3) A slow return to the euthyroid state after treatment
4) The availability of radioiodine

In this state there are only a few places equipped to carry out this procedure, therefore, it is necessary for the majority of patients to leave their home town for uptake studies, and then return for the therapeutic dose.

I might point out in passing that in our clinic, we have found the protein-bound iodine test a most useful diagnostic tool. This test is particularly valuable to those of us who do not have radioiodine available for uptake studies.

In regard to the slow return to the euthyroid state after radioiodine, this may take a matter of several weeks to several months. In the severely toxic patient, preparation with an antithyroid drug may be necessary before giving the radioactive iodine, and subsequent antithyroid therapy may be needed to tide the patient along until the effects of the radioiodine are apparent.

According to Bartels and Bell, there is a much higher incidence of permanent myxedema after radioiodine than after subtotal thyroidectomy. This has also been noted by other workers in this field. There are those who feel that the higher incidence of myxedema may be prevented by giving a smaller dose of radioiodine and repeating the dose later if a euthyroid state is not obtained.

The greatest amount of argument in any discussion of the relative merits of radioiodine and surgery seems to center on the question of the possibility of the carcinogenic effects of radioiodine.

Chaikoff and Goldberg reported the development of carcinoma of the thyroid gland in seven of 25 rats after intraperitoneal injection of 400 microcuries of radioactive iodine. Results of animal experimentation by Doniach, Franz, Wilson, and Starr of the carcinogenic effect of radioiodine on rats of various strains are inconclusive. In fact, the control series of Franz had so many adenomas of the thyroid, that Starr remarked that radioiodine in her rats seemed to protect the animals from thyroid tumors.

In 1950, Duffy reported a total of 28 children with carcinoma of the thyroid. Of this group of 28 cases, ten children had previous x-ray therapy to the thymus. Clark, in 1957, reported 19 children with carcinoma of the thyroid and of this group, all 19 had previous x-ray therapy. Cole has also called attention to this relationship of cancer of the thyroid to previous x-ray therapy.

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*From the surgical service of the Natchez Medical Clinic. Presented before the Mississippi Chapter of the American College of Surgeons, November 15, 1958, Jackson, Mississippi.

Studies by Simpson and Hempelman of the relation of carcinoma of the thyroid in children to previous x-ray therapy to the thymus of two large groups of children, 2,333 of whom had been treated with x-ray and a group of 2,622 who had received no x-ray treatment, revealed there were 11 carcinomas of the thyroid in the first group, and only one adenoma of the thyroid in the second or untreated group.

Duffy, in a recent paper before the American Goiter Association, suggested that the use of radioiodine, including tracer doses be restricted in the young patient until further studies are available. He also pointed out there is no evidence, clinical or experimental, that radiation can cause cancer in adult thyroid tissue.

It is the general consensus of opinion today that radioactive iodine is the treatment of choice in primary hyperthyroidism in:

1. All patients above the age of 20 years, except the pregnant patient.
2. Recurrent hyperthyroidism.
3. Poor surgical risk.

There are, of course, differences of opinion about the correct age limit before radioiodine should be used, but a study of the literature indicates that in general, the age limit has been dropped and the age of twenty years is acceptable to many physicians today. Gordan (University of Wisconsin) has a series of over a thousand cases treated with radioiodine. Many of his cases are in young people and the follow up is ten years. As regards recurrent hyperthyroidism, I believe everyone is willing to try radioiodine therapy in these cases. The high incidence of nerve injury and other postoperative complications makes therapeutic radioiodine a welcome means of treatment by the surgeon. Radioiodine is also best for the poor surgical risk. The poor surgical risk, no matter what the age, is better treated with radioiodine.

Subtotal thyroidectomy is the treatment of choice in primary hyperthyroidism in:

1. Patients below the age of twenty years.
2. Pregnancy.
3. When radioiodine is unavailable or the patient refuses radioiodine therapy.

Surgery has the advantage of immediate results when the patient has been properly prepared. It might be pointed out that in the preoperative preparation of the toxic patient, one of the most common mistakes is inadequate dosage of tapazole or propylthiouracil. The former may be given in doses of 60 to 120 mg daily and the latter up to or over 1000 mg daily.

As previously mentioned, there are still those who believe the age limit of twenty years is too low and the limit of forty to forty-five years of age is more acceptable, but most of these are surgeons who are reluctant to abandon a "tried and true" treatment for primary hyperthyroidism. It is interesting to note that the age limit for radioiodine has gradually dropped from fifty-five (Allen Graham) in 1950 to forty-five and now thirty-five and twenty years.

In a recent issue of the clinical proceedings of the Children's Hospital of Washington, D. C., by Rall, Caulfield, Anderson, and Washington, the authors point out that few children will get permanent remission from propyl-thiouracil. In a case reported by the authors, a seven-year-old child with hyperthyroidism was treated with 600 mgs. of propyl-thiouracil for three years at which time, the drug was discontinued. Subsequently, the hyperthyrodism recurred and subtotal thyroidectomy was performed after proper preparation with propyl-thiouracil and iodine.

In the treatment of the toxic nodular goiter, these are several serious disadvantages of radioiodine:

1. A larger dose is needed than in primary hyperthyroidsm
2 The uncertainty that even with a large dose of radioiodine the thyrotoxicosis will be controlled plus the time lag problem.
3. The possibility of cancer in nodular goiter.

There is higher percentage of cancer in nodular goiter. The possibility of a cancer being overlooked while focusing attention on thyrotoxicosis is a definite possibility. The use of the skiagram to differentiate hot and cold nodules is not entirely reliable. Cold areas can be adenomas or cancer. Hyperfunctioning areas are almost never cancer.

The advantages of radioiodine in the treatment of the toxic nodular goiter is for the patient who is too ill to undergo surgery. There are occasions when an ill patient with thyrotoxicosis may be treated with radioiodine and at a later date undergo surgery in order to eliminate a large goiter.

The advantages of subtotal thyroidectomy in the treatment of toxic nodular goiter are:

1. Eliminate the goiter. The size of these goiters can be huge and often cause annoying symptoms of pressure, especially when there is a substernal extension of the goiter. Since most goiters are in

females, the cosmetic results of removing an ugly mass in the neck is important.

2. Because of the higher incidence of cancer in the nodular goiter, the presence or absence of malignancy can be determined by surgery, and the appropriate treatment carried out as indicated.

3. As is the case in the treatment of primary hyperthyroidism, subtotal thyroidectomy for toxic nodular goiter produces immediate results. These patients are relieved of their thyrotoxicosis without any lag period, and in the hands of the able surgeon the results are excellent with minimal complications.

In conclusion, surgery is still an important means of treatment of the thyrotoxic patient. Subtotal thyroidectomy is the treatment of choice in the young with primary hyperthyroidism and with few exceptions is the treatment of choice for all patients with toxic nodular goiter.

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MISSISSIPPI ACADEMY OF GENERAL PRACTICE

Postgraduate Reports

Study reports should be sent in this month. The 1958 membership card is your reporting form.

For the guidance of members who have not written it down, the following courses are acceptable for Category I credit, maximum hours as indicated:

1. Postgraduate Seminar, January 22 — 5 hrs.
2. Recent Advances in Care of Amputees, February 28 — 5 hrs.
3. Cardiovascular Seminar, April 2, 3, and 4 — 20 hrs.
4. Medical-Dental Seminar on Hypnosis, April 10, 11 and 12 — 18 hrs.
5. Miss. Academy of GP Annual Assembly, Sept. 17 and 18 — 9 hrs.
6. First Annual Cancer Seminar, Dec. 4 — 6 hrs.
7. New Orleans Medical Assembly — 20 hrs.
8. Mid-South Medical Assembly, Memphis — 20 hrs.
9. AAGP Annual Assembly — 15 hrs.
10. EKG Correspondence Course from University of Southern California — 35 hrs.

Reports should be sent to Miss Louise Lacey, Executive Secretary of the Mississippi Academy of General Practice, P. O. Box 1435, Jackson.

Getting Acquainted

The following counties make up District II: Perry, Forrest, Lamar, Wayne, Jones, Covington, Jefferson-Davis, and Lawrence.

Dr. J. P. Culpepper, Jr., of Hattiesburg, is director for the district.

Members in District II are: H. L. Boone, Laurel; C. P. Crenshaw, Collins; Ernest E. Ellis, Laurel; Weston E. Folse, Collins; J. D. Hutchins, Newhebron; Charles R. Jenkins, Laurel; Angus M. McBryde, Sumrall; David W. McLean, Laurel; William E. Moak, Richton; A. T. Tatum, Petal; Kenneth D. Terrell, Prentiss; Lee H. Trapp, Monticello; Nelson O. Tyrone, Prentiss; Willis Walker, Jr., Hattiesburg; and William R. Campbell, Prentiss.

(District I was previously listed)

AAGP Annual Assembly

It's all the way to San Francisco, California, for the 1959 Annual Assembly of the American Academy of General Practice.

The date is April 6-9, 1959.

The program, described in the three past issues of the Journal GP, is an excellent one. Make plans now to attend.

Medical Center Miscellany

Dr. William C. Holland has been named chairman of the pharmacology department at the University Medical Center, effective January 1. Formerly a professor of pharmacology at Vanderbilt University, he succeeds Dr. James C. Rice who retired Dec. 31.

In 17 years as professor of pharmacology and chairman of the department, Dr. Rice had seen the medical school progress from a two-year, 60-student institution to the big and bustling Medical Center in Jackson where he has helped teach more than 270 medical students and 50 student nurses.

Dr. Rice came to the Ole Miss campus from Louisiana State University School of Medicine in 1942 when Dr. B. S. Guyton was dean.

A 1922 graduate of the University of Missouri, Dr. Rice was a high school science teacher before receiving his bachelor's degree and taught organic chemistry in Kansas City Junior College for some 15 years before beginning his career as a medical educator.

He earned his master's degree at Missouri, followed by a Ph.D. in pharmacology there in 1934. Named an instructor in pharmacology at LSU in 1938, he was an assistant professor before coming to the University of Mississippi.

He and Mrs. Rice will live on the Bon Secours River near the Alabama Gulf Coast.

An Alabaman by birth, the new chairman of the pharmacology department had been on the Vanderbilt faculty since July, 1950, rising from an instructor to professor in the eight years.

He graduated from Vanderbilt University in 1944 and received his M.D. degree there in 1948. He was a public health fellow at Vanderbilt for the next two years and spent several months studying in Oxford, England, in 1956.

Dr. Holland is a member of the American Society of Pharmacology, Sigma Xi, the Southern Society of Clinical Research and the American Academy for the Advancement of Science. He is the author of 35 publications in the fields of enzymology, heart irregularity and permeability.

Noted Speaker

Dr. Rene Jules Dubos, head of the Laboratories of Pathology and Microbiology and the Rockefeller Institute, will speak at the Medical Center in February.

The topic of his lecture, tentatively slated for February 10, is to be "Environmental Factors and Problems of Infection."

Dr. Dubos' outstanding contributions to scientific literature from his studies of the biological properties of soil bacteria played a material part in establishing the groundwork of the now tremendous field of antibiotic research and earned him world-wide recognition.

He was born in France and began his career in soil microbiology when he came to Rutgers University in 1924. He is a former professor of comparative pathology and tropical medicine at Harvard and has been associated with the Rockefeller Institute since 1927.

Among his published books are "The Bacterial Cell," "Bacterial and Mycotic Infections of Man," "The White Plague—Tuberculosis, Man and Society," and "Biochemical Determinants of Microbial Disease."

Dr. Dubos is one of 16 noted scientists who will lecture in medical schools this winter sponsored by E. R. Squibb and Sons in commemoration of the firm's 100th anniversary.

Other Programs

Two seminars for physicians will be held at the Medical Center during the early spring. A Symposium on Psychosomatic Aspects of Obstetrics and Gynecology is to be held March 4 and the annual Cardiovascular Seminar will take place April 1 through 3. Physicians are urged to mark these dates on their calendars now. Details on both events will be announced later.

NOTES FROM THE EXECUTIVE OFFICER OF THE

MISSISSIPPI STATE BOARD OF HEALTH

A. L. Gray, M.D.
Executive Officer

PHYSICIAN LICENSURE BY RECIPROCITY

Eighteen physicians were issued permanent license to practice medicine in Mississippi by reciprocity with other states at the regular semi-annual meeting of the Board of Health on December 8, 1958. Contrasted to this, 42 physicians who were licensed by examination in Mississippi were certified to other states. Most of these certified to other states took their examinations in June, 1958, given by the Mississippi State Board of Health.

STATE HEALTH OFFICER ATTENDS WASHINGTON POLIO CONFERENCE

The Executive Officer of the State Board of Health, Dr. A. L. Gray, was among a group of three State Health Officers, representatives of the American Medical Association, American Academy of Pediatrics. American Academy of General Practice, and a few others invited by Surgeon General Burney to Washington on December 5 to discuss the present status of polio vaccination and the lag in giving it.

Pointed out in this conference were four serious epidemic areas this past summer, respectively, in Detroit (519 paralytic cases), New Jersey (101 cases in 3 counties), and adjoining areas in Virginia and West Virginia (146 paralytic cases). The national experience shows that one-half of the total cases in 1958 were in the age-group under 5 years and many over 20.

The 1958 national experience shows the vaccine effectiveness is holding up well 3-4 years after 3 injections of vaccine and that only 12.7 per cent of paralytic cases had received 3 injections.

Among other things this conference emphasized the following:

(a). Urgency of state and local medical societies and health departments working together in evaluating current status of vaccination.

(b). Increased emphasis by individual and organized physicians and health departments in pushing vaccination, particularly in children under 5, teen-agers, and adults 20-40 years old.

(c). Many areas have not yet reached even the 50 per cent mark in protecting children under 5 and that adult groups even have a lower response.

The Executive Officer urges all physicians to insist that all people under 40 years of age get the vaccine. The group from 20 to 40 years of age must depend entirely on their private physicians, but those under 20 may secure vaccine from the health department or their physicians.

PROFESSIONAL LIAISON OFFICER

Mr. Pete Arlen Fussell has just been employed in the Division of Preventable Disease Control as professional liaison officer. He will spend all his time calling on private physicians individually, beginning with those licensed to practice most recently. The purpose of the Board of Health in again activating this service is based on the concept that both private physicians and public health workers will serve in their respective fields better to the extent that each group thoroughly understands the problems and objectives of the other. This representative will be able to answer questions as to laboratory, communicable disease control, correctional programs, and other services available to physicians from the Board of Health and county health departments and receive complains, criticisms, and suggestions from private physicians as to the various activities or lack of them by the health departments. He will also indicate the responsibilities of private physicians in regard to public health in general.

The need for this kind of service continues to be emphasized by many queries by telephone, letter, and otherwise from physicians in regard to services available to them and what their responsibilities are in relation to public health. All physicians are urged to consider his efforts when he calls by to see them.

WATCH FOR SWIZZLE STICK POISONING

In case you encounter a poison ivy-like eruption which you cannot explain, keep in mind the possibility that it may be due to handling unshelled and unroasted cashew nuts. Various novelties are being ornamented by converting the kidney-shaped cashew nut into dolls and placing them on swizzle sticks, straw shoes, decorative pieces for flower pots, et cetera. These novelties are made primarily in Haiti, and the hull of the nut contains a phenolic substance which is an active irritant to the skin or mucous membrane. Another component of these doll novelties is the eyes of the doll made of the jequirity bean which has a highly toxic albumin. If children play with the dolls and swallow one of the jequirity bean eyes, they might become critically ill. These jequirity beans are used also to make beads and other ornaments. They are heart-shaped and vary in size up to 1 cm. in diameter. These novelties have received wide distribution in this state and the nation before their toxic qualities were well known to American medicine.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
Harvey F. Gorrison, Jr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

A STUDY OF THE EFFECTS OF TYPE A INFLUENZA ON THE CARDIO VASCULAR SYSTEM OF MAN

By: J. Walsh, G. E. Burch, A. White, and others

Annals of Internal Medicine, Volume 49: 502-528 (September), 1958.

These authors report on 34 patients between the ages of 12 and 70 years, seen in Charity Hospital of Louisiana, in New Orleans, during the height of the epidemic of Asian influenza during July and August of 1957 and in whom the diagnosis of Asian influenza was readily established. These 34 patients were divided into two groups; that is, 30 patients complicated by clinically *evident* cardio-vascular disturbances and four patients with influenza complicated by clinically *significant* cardio-vascular disturbances.

Of the four patients with clinically significant cardio-vascular complications, two had rheumatic mitral stenosis. Severe infection in a patient with mitral stenosis and sufficient impairment of cardiac reserve or a critically reduced mitral orifice can produce cardiac insufficiency. That was probably true in one of these patients. In a second patient, congestive heart failure occurred, but was readily handled by restricted salt, bed rest, and administration of mercurial diuretics. The third patient, a pregnant woman, almost died within 24 hours of the appearance of the first symptoms of influenza and appeared at the height of her illness to be in acute pulmonary edema. Energetic therapy was effective and no residual damage was observed. The fourth patient had a severe attack of acute rheumatic pancarditis with congestive heart failure and this attack may have represented reactivation of rheumatic fever by an unconfirmed streptococcic infection complicating influenza, or smoldering rheumatic activity manifesting itself as a result of the influenzal infection.

In the 26 patients, without clinically significant cardio-vascular complications, most of these (23) had abnormalities of the T-wave in the standard electrocardiogram and in the loop direction-loop of the spatial electrocardiogram.

Comment: This study coincides quite well with my more limited experience in that Asian influenza produces only minor and transient specific cardio-vascular effects and in a patient with pre-existing organic heart disease, congestive heart failure is frequently precipitated, either by impairing pulmonary reserve or by reactivation of rheumatic fever. All of us during this last epidemic of Asian influenza in 1957 saw many cases in elderly people in which loss of compensation occurred simultaneously with or immediately following the development of influenza. Thus, this particular infection probably presents no more differences in specific acceleration or aggravation than any other.

PEDIATRICS

Studies in Cystic Fibrosis of the Pancreas: A Simple Test for the Detection of Excessive Chloride on the Skin.

H. Schwachman and N. Gahm, Children's Medical Center, Boston, Mass. New England J. Med. 255:999-1001, 1956.

In cystic fibrosis of the pancreas the concentrations of sodium, potassium and chloride in the sweat are nearly always abnormally high. Various methods have been devised for performing such a diagnostic "sweat test," based on direct collection of sweat followed by chemical assay. It has become clear that measurement of either sodium or chloride alone is adequate for diagnostic purposes.

The authors describe a simple and original technique whereby a finger or hand or foot are pressed lightly upon an agar test medium containing silver nitrate and potassium chromate. When the chloride content of the sweat is excessive (over 250 mEq./liter), a pronounced whitish-yellow discoloration appears immediately. When the chloride content is normal (less than 60 mEq./liter), the imprint is barely detectable.

Of 140 patients with cystic fibrosis, 138 exhibited a strong reaction with this procedure. Of 77 healthy infants and children, not one exhibited a strong reaction. Only 4 of 103 children with miscellaneous diseases and only 1 of 140 healthy adults gave a strong reaction. However, 6 of 39 siblings of patients with cystic fibrosis and 22 of 143 parents of patients gave a strong reaction.

Since newborn infants do not sweat perceptibly, this approach cannot be used for recognition of meconium ileus as a cause of neonatal intestinal obstruction. (4 references. 1 table. 2 figures.)

To prepare 500 ml. of the test medium dissolve 25 gm. of agar in 500 ml. of boiling water. Add 4.2 gm. of silver nitrate to the melted agar and stir thoroughly. Add 2.5 gm. of potassium chromate and stir again. Pour the warm red mixture into plastic Petri dishes or onto a cardboard surface and permit to harden. This test medium can be stored in the refrigerator or at room temperature. When exposed to warmth, the agar tends to dry out. It can be kept in sealed plastic bags for long periods, without deterioration.

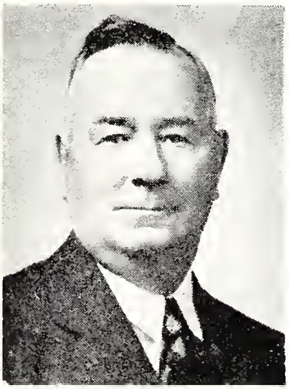
COMMENT (by Harvey F. Garrison, Jr., M.D.)—This test has been used by us and felt to be reliable and an excellent screening test to be used on suspect cases seen through the clinic or in the hospital.

FIFTY-YEAR CLUB BIOGRAPHICA

PROFILE OF THE PRACTICING PHYSICIAN

Fifty years of service to mankind! As I look back and consider other careers that I might have chosen, I sometimes feel that I would settle for a less arduous calling. But on more sober thought, I know there could be but one life for me—the life of a doctor.

WILLIAM FLETCHER STROUD



William Fletcher Stroud, son of William Perry and Pernecie Dollar Stroud, was born in Neshoba County, Mississippi, August 31, 1875.

He attended high school in Simpson County; the University of the South one year, and was graduated from the University of Tennessee in 1903. Following graduation, Doctor Stroud did postgraduate work at Tulane and Washington University.

In December 1917, Doctor Stroud moved to Mount Olive. For over 35 years, he served as a deacon in the Mt. Olive Baptist Church and as a trustee in the public schools of Mount Olive for several years.

Doctor Stroud was chairman of the committee responsible for the establishment of the Mississippi State Sanatorium. He also was instrumental in having the Charity Hospital established at Laurel. He has been active in civic life serving as mayor of Mt. Olive for two years and alderman for more than eighteen. He has also served on various state governing boards such as eleemosynary and penitentiary. For four years he was a member of the legislature.

For more than 50 years, Doctor Stroud has been a Mason and was honored on his fiftieth anniversary.

The town of Mount Olive, led by Mrs. F. L. Dickson, honored Doctor Stroud on June 15, 1953, on his fiftieth anniversary of medical practice. People from all areas of the state came, including classmates and others. Dr. Felix J. Underwood was guest speaker.

Doctor Stroud continues to serve his fellowman faithfully and well and is best known for his devotion to duty and his willingness to render medical service in time of need in spite of handicapping conditions.

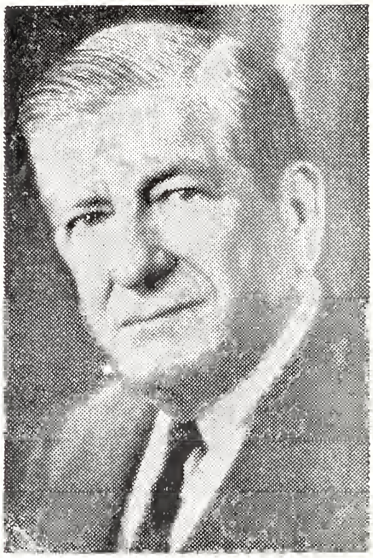
In September of 1958, Doctor Stroud was honored with membership in the Fifty-Year Club.

MAN OF THE YEAR AWARD GOES TO DR. UNDERWOOD

A man who has been credited with saving a million lives is Mississippi's Man of the Year.

Dr. Felix J. Underwood, who retired in June after 34 years as executive officer of the State Board of Health, was the pick of UPI editors casting ballots in the annual contest.

He was chosen over four other men who were nominated—Representative John Bell Williams, former Gov. Hugh White, Mississippi House Speaker Walter Sillers, and Gov. J. P. Coleman, Man of the Year in 1957.



Dr. Underwood, who began his career as a horse-and-buggy doctor in Monroe County in 1904, took over as the state's top health officer in 1924 and conducted a dedicated battle against disease and ignorance, turning Mississippi's health service into one of the finest in the nation.

His programs practically wiped out such widespread diseases as typhoid fever, malaria and diphtheria and brought other diseases under control.

Dr. Underwood's mother had died because of inadequate care during childbirth and one of his first actions as health officer was to begin rigid physical and mental tests for midwives. The program greatly lowered the death rate of infants and young mothers in Mississippi.

Perhaps the death of his daughter following diphtheria spurred his relentless battle against the disease despite protests against his use of antitoxin.

Dr. Underwood himself was struck by undulant fever and during the months he stayed in bed he reasoned that raw milk was spreading the fever. Some milk producers fought his campaign for sterilized milk, saying it was silly to try to improve natural milk. "If this is true," he replied, "then why not drink the muddy water from the Pearl River without purifying it?"

Dr. Underwood so curbed malaria that in the year 1953 there was only one case, and the patient was a soldier who contracted the disease in Korea.

Dr. Underwood is now in retirement but the 75-year-old crusader still may often be found in an office set aside for him in the health department. He serves, without pay, as a consultant and his successor, Dr. A. L. Gray, still calls him "the chief."

The State Building Commission named a building after a living person for the first time in history when it chose to call a new health department headquarters the Felix J. Underwood Building.

HE SAVED A MILLION LIVES

The caption of this editorial is not original. It was used as the title of a 1954 article in the *American Magazine* which chronicled the thrilling story of Dr. Felix J. Underwood, executive health officer of the Mississippi State Board of Health for a third of a century.

There are thousands of people living today who would have been victims of typhoid, diphtheria, or tuberculosis, were it not for this man.

Dr. Underwood was a pioneer horse-and-buggy family physician. He had a few hundred patients, about all one country doctor could handle. He decided to expand his practice, to fight diseases at their source—to prevent them. Thus the number of his patients grew to two and a quarter million—the population of Mississippi.

This writer checked the biographical data of Dr. Underwood—the total posts held were 107. This indicates the amazing usefulness and contribution of this altogether gentle, and friendly person.

No one can accurately predict what history will say about this period of Mississippi history. But history could well point to him as the Mississippian in his generation having made the greatest contribution to mankind.

For his contribution, Mississippi honors him. For his genius at attainment we respect him. For the gentleness and sweetness of his personality we, hundreds of thousands of us Mississippians, love him. He's the kind of man people can love.

—From the *McComb Enterprise-Journal*

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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THANKS, AND RESOLVED TO SERVE BETTER

The plaque of commendation for disseminating news on hospital activities which came to the editor of the *Mississippi Doctor* at the January meeting of the Commission on Hospital Care was received with the deepest appreciation. It not only gave us a tremendous personal lift, but it also pointed up perhaps one of the most important factors in the magnificent growth of our hospital and medical facilities over the state: The fine cooperative spirit of the two groups—the Hospital Association and the State Medical Association—is increasing medical service to our people and placing Mississippi well on the way to offering the best health care program in the nation. We are sure that no state in the union has made more progress in this respect, considering the overall picture.

Voluntary insurance has been a potent influence in this progress and here too is a field for safeguarding through harmony and understanding.

It is our faith that medicine will remain free as long as we as doctors, you in hospital administration, nursing and other allied professions, and health services hold the torch of service above self.

DR. GRAY ON NATIONAL COMMITTEE

Dr. A. L. Gray, executive officer of the Mississippi State Board of Health, is one of the three state health officers in the nation invited by Dr. Leroy E. Burney, surgeon general of the U. S. Public Health Service, to serve on a special committee to consider means to correct the lag in polio vaccinations. He met with the committee in Washington, D. C., on December 5.

Dr. Gray has served on a number of national-level committees on polio and other communicable diseases and is recognized as a leading authority on disease control programs.

Mississippi's polio vaccination program is considered outstanding, and the State Board of Health was recently requested to send information regarding it to the Public Health Service.

DORM FOR NURSES

According to a news report from the Medical Center in Jackson, a $300,000 dormitory for nursing students will soon be under construction. It is to be financed by the Building Commission and the Commission on Hospital Care. It is supposed to house 80 student nurses. The Baptist Hospital in Jackson is doing a fine job training nurses now, and so is St. Dominic, as is the Street Memorial in Vicksburg. With these four outstanding institutions training nurses in addition to eight or ten smaller schools over the state, training by the affiliation plan, our state may expect in the near future to supply some of the much-needed nurses. The University school is turning out the nurse with an academic degree. This is fine. We need this type, many more than we have, but we can use to such a good advantage the three-year R.N. who will have had two or three years in college. At this time the need for bedside nursing is urgent and the R.N. has done a fine job of it. We want to keep our standards on the upward trend, but we do not think it sound judgment to make the college degree a minimum requirement. Many of our good doctors do not have a college degree even now. Let us prepare nurses for good service — the B.A. or B.S., the R.N., and the practical nurse.

HIGH COST OF SMOKING

We note that the tobacco bill for 1958 was six billion, four hundred and fifty million. This is a nifty sum for a people who complain about the high cost of medicine. It is indeed possible that smoking may be responsible for some of the illness.

AS IS THE LAND SO ARE ITS PEOPLE

Some say that doctors have no business with a farm. Maybe some of them do not. However, there is such an important relation between the fertility of the soil and the health of the people, farming is not an irrelevant interest. The nutritive content of the food people eat has much to do with their health, their vigor and endurance. It has been well observed that what is put into the stomach should feed, not simply fill. So if the uses made of our soil relate to the health of our people, all should be interested in the land.

LEADS THE NATION

For percentage increase, Jackson, Mississippi, led the nation for business increase. Jackson is located at the crossroads of the Deep South, in a section well balanced in agriculture and industry, in health, educational, and church facilities. We proudly acknowledge the fine way this city is meeting the challenge for progress in our state.

MID-SOUTH PAST-PRESIDENTS

Five Mississippians, seven Arkansans, and six Tennesseeans comprise the list of living past-presidents of the Mid-South Postgraduate Medical Assembly. Following custom established a few years ago, the president entertains this group, now a club, with dinner. The occasion always brings together a fine fellowship and good food. Taking a more serious turn during the presidency of Dr. John Archer of Greenville, Mississippi, the group began having an interesting and informative speaker address the club.

NORTHEAST MEDICAL SOCIETY

The fourth quarterly meeting of the Northeast Mississippi Medical Society, held in Tupelo, welcomed as guest essayist, Dr. M. J. Swinney of Memphis, accompanied by society members Dr. and Mrs. V. B. Philpot, also of Memphis.

At the close of the meeting Dr. S. J. McDuffie of Nettleton, turned the gavel over to Dr. Thomas N. Braddock of West Point, incoming president.

Dr. Mike Caldwell was elected president-elect. Dr. Eugene Murphey, III, is secretary-treasurer.

NO TIME FOR FIREWORKS

Christmas is over, but the "firecrackers" left their imprint on the hands, faces and eyes of many children. Christmas is the least appropriate time for fireworks. It would be well for us to begin a campaign now to outlaw firecrackers at Christmas by legislation. We believe this would be a good project for our State Medical Association.

TOO MUCH OF A GOOD THING

Many people complain of "dizziness". We might mention fifty causes of this ailment and then not get all of them. But one common cause is excessive ear wax. Too much wax in the ear plagues many people, may cause deafness, dizziness, pain, itching and serious infection. More wax in one ear than the other may cause serious imbalance. So, along with the very unusual, it is well to take a look for ear wax in the patient complaining of dizziness.

DR. W. H. FRIZELL

The death of Dr. W. H. Frizell of Brookhaven took from the ranks of our State Medical Association one of its oldest and best known members. He was president of the Fifty-Year Club and took a great interest in it. He was an able and active practitioner, faithfully serving organized medicine including an active and able year as president of the Mississippi State Medical Association. He was strong in his convictions and always had courage to back his beliefs. He was strong for keeping the doctor-patient relation, held to a high standard of ethics in medicine, and always opposed socialized medicine in every form. He was a fine citizen and a loyal friend.

MAJORS BOOK BOOTH

Note the ad of Dr. J. A. Majors for the Mid-South. He offers Saunders medical books and many others. A product of Mississippi, Dr. Majors typefies the spirit of Southern medicine. Now more than four-score and four years, he is alert, full of optimism and good cheer, looking to the future. He loves his friends and enjoys deer hunts. He operates three book stores, one in Dallas where he lives, one in New Orleans, and one in Atlanta. The *Soul of the Surgeon* by Dr. Rudolph Matas, is also available at the Majors book booth.

DEATHS

DR. R. B. CUNNINGHAM

Dr. Robert Blythe Cunningham, Booneville physician since 1926, died December 13 at Northeast Mississippi Hospital after a six-month illness. He was 61.

Born and reared in Prentiss County, Dr. Cunningham entered the University of Mississippi in 1914 and, after a two-year interruption for service with the Navy during World War I, he received his bachelor of science degree. He later received his medical degree from Tulane University in New Orleans. At Tulane, he was a member of Nu Sigma Nu, medical fraternity.

Dr. Cunningham returned to Booneville in 1926 to become associated with Sutherland Clinic. He was initiated into the American College of Surgeons in 1936. He was a Mason and a Shriner and a member of the Booneville Baptist Church.

He leaves his wife, Mrs. Evelyn Alexander Cunningham; his stepmother, Mrs. R. C. Cunningham of Booneville; a son, John Robert Cunningham of Greenwood, Miss.; a brother, Thomas Cunningham of Booneville; two sisters, Miss Mable Cunningham and Miss Quay Cunningham, both of Booneville.

DR. KOTZ ALLEN

Funeral services for Dr. Kotz Allen, prominent 83-year-old eye, ear, nose and throat specialist, died November 3 in Charity Hospital at New Orleans.

He was well known in Bay St. Louis where he maintained a medical clinic at Toulme and Easterbrook Sts. Dr. Allen opened his clinic in Bay St. Louis weekends and was beloved for his many acts of charity.

A native of Como, Miss., he was graduated from the Medical School of the University of Tennessee in 1901 and began his residency in New Orleans in 1918 at Eye, Ear, Nose and Throat Hospital.

He remained on the staff of that hospital until 1947 when he was appointed to the honorary staff. He retired from active practice in 1950.

Dr. Allen was a member of the Southern Medical Association and the Orleans Parish Medical Society. He was a veteran of World War I.

He is survived by his wife, Mrs. Lillie West Allen; a son, Dr. Joseph Allen, Hammond, La.; five daughters, Miss Ruth Allen, Jackson, La., Mrs. Jules Grasser, Los Angeles, Calif., Mrs. E. V. Dillingham, Brevard, N. C., Mrs. William Schultz, Uganda, Africa, and Mrs. Lawrence Bertheaud, LaFayette, La. A sister, Mrs. Joe Weathers of Como also survives.

DR. S. T. McILWAIN

Funeral services were held December 27 for Dr. S. T. McIlwain, 74, retired physician and colonel on the staff of Gov. J. P. Coleman.

A graduate of the old Mississippi Medical College at Meridian in 1910, Dr. McIlwain completed postgraduate work at Tulane and practiced in Wayne County until his retirement in 1957.

He served for many years as surgeon for the Gulf, Mobile and Ohio Railroad. He was a Mason and a Baptist.

Survivors include his wife, three sons, Dr. A. J. McIlwain of Jackson, Sam D. McIlwain of Greenville, and Willard McIlwain of Washington, D. C.; two brothers, Charles McIlwain of El Segundo, Cal., and M. M. McIlwain of Wayne County; five sisters, Mrs. W. L. Busby of Jackson, Ala., Mrs. Jack May and Mrs. Mattie Holston, both of Buckatunna, and Mrs. C. Walker and Mrs. John Holcomb, both of Hattiesburg.

DR. H. C. OWEN

Services were held from Holly Bluff Methodist Church December 22 for Dr. Harbert Claude Owen of Holly Bluff. He was 80.

A native of Attala County, he had lived in Holly Bluff, where he practiced medicine, since 1902.

Dr. Owen was a graduate of Memphis Hospital Medical College, class of 1902.

He leaves his widow; a daughter, Mrs. Alfred Mitchell of Greenville; three grandchildren, and two great-grandchildren.

DR. C. J. EDWARDS, JR.

Dr. Charles J. Edwards, Jr., ear, eye, nose, and throat specialist, of Natchez, died December 16 in New Orleans. He was 46.

He was a native of Vicksburg and practiced at the Mercy Hospital there before moving to Natchez in 1955. He received his M. D. degree from Tulane University in 1940.

He leaves his widow; his mother, Mrs. Charles J. Edwards, Sr., of Starkville, and a brother, Franklin Edwards, also of Starkville.

DR. VAN ZANDT

Services for Dr. William Emory Van Zandt, brother of H. V. Van Zandt, Sr., of Jackson, were held December 8 in Covington, La.

Burial was in Metaire cemetery, New Orleans, with Masonic rites.

Dr. Van Zandt is survived by his brother, three daughters, one son, and a number of grandchildren. He practiced medicine for 54 years in New Orleans and Mandeville. A past mayor of Mandeville, a Mason, and a member of the Baptist church, he was married to Anna Hawkins Van Zandt, who died over two years ago.

DR. CHARLES A. KENNEDY

Dr. Charles A. Kennedy, Sr., passed away suddenly December 16 at his home in Taylorsville. Funeral services were held at the Taylorsville Presbyterian Church.

Dr. Kennedy had practiced medicine for 47 years. He was a native of Simpson County, a graduate of the Memphis Hospital Medical School, and was widely known throughout this territory. He practiced medicine at the Cohay logging camp of the Eastman Gardiner Company until that camp was abandoned and then located in Taylorsville.

He was a retired naval officer, one of the founders and charter members of the Taylorsville Presbyterian Church, in which church he was a ruling elder at the time of his death, a Shriner, and a member of the American Medical Association and the American Academy of General Practice.

He is survived by his wife, two daughters, Mrs. Joe Weems, Laurel, and Mrs. J. W. Walker, Taylorsville; two sons, Max Kennedy, Taylorsville, and Dr. C. A. Kennedy, Jr., Taylorsville, and seven grandchildren.

DR. C. R. BUSH

Dr. C. R. Bush, Noxubee County physician and former member of the Mississippi Legislature, died at his home near Macon, December 4. He was 86.

Services were held at Dare Funeral Home, the Rev. Don Morris officiating.

Dr. Bush graduated from Tulane Medical School in New Orleans in 1892. From 1892 until 1936 he practiced medicine in Noxubee County. He was elected to the Mississippi State Senate in 1936 and served until 1944.

His wife, Mrs. Nettie Cassibry Bush, died several years ago.

He leaves a son, C. R. Bush, Jr., of near Macon; a daughter, Miss Ramille Bush of Lacomb, Louisiana.

DR. JOHN R. DeVELLING

Dr. John R. DeVelling, 72, retired surgeon and a resident of 327 Briarwood Drive, Jackson, died December 3 at the University Hospital. A former longtime resident of Ridgeland, Dr. DeVelling was a native of Chicago. He had lived in Jackson since his retirement in 1952.

A graduate of Tulane Medical University, Dr. DeVelling had practiced in Laurel and in Roseclair, Ill. He was director of the Blood Bank of the American Red Cross for three years, was a Fellow of American Colleges and Universities, a member of the American Medical Association, the Central Medical Society, and the Mississippi State Medical Association. He was a World War I veteran and a member of St. James Episcopal Church.

Survivors include his wife, the former Marguerite Woodridge of Ridgeland; four sisters, Mrs. B. F. Battley, Mrs. Hardy Woodridge, Mrs. Clarence Rice, all of Ridgeland; and Mrs. Ben Howard of Jackson.

DR. W. H. FRIZELL

Services for Dr. W. H. Frizell, veteran Brookhaven physician who died December 2 after a long illness, were held from the First Methodist Church.

Dr. Frizell, a native of Montgomery County and an honor graduate of the University of Tennessee Medical College, began his practice in Brookhaven in 1904.

He was Lincoln County's first health officer and served in that capacity for 25 years.

Dr. Frizell was a past-president of the Mississippi Medical Association and was a co-founder and past-president of the Tri-County Medical Association.

He was chairman of the Democratic Executive Committee in Lincoln County for 25 years, served as chairman of the Brookhaven Housing Authority, was a director of the Mississippi Hospital Medical Service (Blue Cross-Blue Shield) and a director of the Mississippi Division of the American Cancer Society.

Survivors include his wife, Mrs. Margaret Alexander Frizell of Brookhaven; four daughters, Mrs. H. F. McShane of Greenwood, Mrs. Frank Doudican of Biloxi, Mrs. Jack Sarphie of McComb, and Mrs. H. J. Underwood of Jackson; two sons, W. H. Frizell, Jr., of Pensacola, Fla., and George Frizell of Monroe, La.; two brothers, Tom Frizell and Henry Frizell, both of Yazoo County; and two sisters, Mrs. G. W. Lewis and Miss Mary Ella Frizell, also of Yazoo County.

DR. PRENTISS E. SMITH

Services were held December 1 at Main Street Methodist Church for Dr. Prentiss Edward Smith, Hattiesburg physician who died after a lengthy illness. He was 57.

Dr. Smith had practiced in Hattiesburg for 32 years. He was resident physician at Methodist Hospital from 1926 to 1929; was co-founder and co-owner with Dr. R. E. Schwartz of the Medical Clinic in Hattiesburg; and was elected the first chief of staff of Forrest General Hospital after its establishment.

He was a graduate of the University of Mississippi and a 1926 honor graduate of Tulane University School of Medicine.

Dr. Smith was a fellow of the American College of Surgeons and the International College of Surgeons and was a member of a number of other medical organizations. He was a steward of Main Street Methodist Church, a Mason and an Elk.

He leaves his wife; a son, Prentiss Edward, Jr., a senior at Tulane Medical School; a daughter, Katherine Arnold Smith, a senior at Judson College, Marion, Ala.; a granddaughter; and two brothers, Burnice W. and Dr. Hobart A. Smith, both of Hattiesburg.

RESIDENCY

The Methodist Hospital, Memphis, Tennessee, 425 beds now in operation and 500 beds by January 1960, is establishing a one-year RESIDENCY IN INTERNAL MEDICINE beginning January and July 1959. Salary $325.00 per month. Uniforms and food provided. Living-in optional. Women eligible. Approval pending inspection May 1959 and will be retroactive to January 1959. For information, contact J. M. Crews, Administrator, Methodist Hospital, Memphis, Tennessee. 2t

VACANCY

Due to the tremendous increase in the Civil Aeronautics Administration program which has been brought about by the rapid expansion of both military and commercial air transportation, there is urgent need for an additional medical officer to work twenty hours a week.

The duties will involve assisting the Regional Flight Surgeon whose fundamental function is to administer the medical certification of airmen as required by Civil Air Regulations.

This position is located in the Fort Worth Regional Office on Haslet Road which has jurisdiction over eleven states; namely, Oklahoma, Texas, Arkansas, Louisiana, Tennessee, Mississippi, Alabama, Georgia, North Carolina, South Carolina, Florida, and also includes Puerto Rico, Virgin Islands, Panama, Canal Zone, and Swan Island, West Indies.

The salary on a full-time basis for forty hours per week is $10,130 per annum.

SOUTHWESTERN SOCIETY OF NUCLEAR MEDICINE

The Southwestern Society of Nuclear Medicine will hold its fourth annual meeting at the Roosevelt Hotel in New Orleans, Louisiana, March 14-15, 1959. Samuel B. Nadler, M.D., Program Committee, 1520 Louisiana Avenue, New Orleans 15, Louisiana.

Treatment of Metastatic Cancer
A Review of Current Methods

ROBERT P. McBURNEY, M.D.†
Memphis, Tenn.

When is a cancer case hopeless? The optimist would say, "When there is life there is hope." The pessimist, conversely, may concede defeat with the first appearance of metastasis or recurrence. Although no definitive cancer cure has yet been discovered, much can be done for the patient with metastatic cancer — measures which prolong life, ease pain, and give hope.

The treatment of metastatic cancer will not be successful unless the attending physician adopts an aggressive and optimistic attitude. Although excessive treatment such as super-radical surgery is deplored, at the same time, there is plentiful evidence that continued therapy is of great value even with seemingly hopeless cases.

The treatment of metastatic cancer may be divided into five methods: 1) surgery, 2) hormone therapy or surgery to endocrine glands, 3) radiation, 4) use of radioactive drugs, 5) chemotherapy.

Surgery for Metastatic Cancer

Surgery to the primary tumor and its local metastases has proved the most beneficial of all methods in the treatment of malignancy. Some tumors that appear inoperable due to local extension, with a more radical procedure, may be curable as illustrated by the following case.

Case No. 1—C. B., a man 68 years of age, was first seen in February, 1955, with a history of the presence of a mass in the right lower abdomen for three months. Examination revealed a fixed, tender mass in the right lower abdomen. Roentgen study of the colon was negative. Laparotomy revealed a large, fixed mass attached to the right lateral wall of the abdomen which partially surrounded the right iliac artery. It was possible to remove the mass along with the right colon by resection of a portion of the abdominal wall and four centimeters of the iliac artery with insertion of an arterial homograft to restore arterial continuity. The patient is in good health with good arterial pulses.

This case demonstrates that even extension to major vessels need not be considered a hopeless situation.

Metastasis to adjacent organs, even those of semi-vital nature, need not render a patient hopeless as illustrated by the following case history.

Case No. 2—V. McP., 58-year-old woman, was seen in July, 1957, with a complaint of burning pain in the suprapubic area. She was thought to have a granular urethritis and was treated by a urologist for this. She had had carcinoma of the cervix in 1941 and received heavy doses of radiation at that time with apparent cure of the carcinoma but with the development of radiodermatitis, proctitis, and cystitis.

The urethritis did not clear, and in February, 1958, a plaque-like thickened area in the vesicovaginal septum was found which biopsy proved to be a squamous cell carcinoma. Repeat cystoscopy showed the bladder also was involved by tumor. Microscopic examination of vaginal secretions showed malignant cells with characteristics suggestive of radio-resistance.

Anterior pelvic exenteration was carried out on February 21, 1958; the uterus, tubes, ovaries, vagina, bladder and urethra were excised and both ureters were implanted into the colon. The patient recovered without trouble, and eleven months later had no evidence of recurrence. She is working daily.

Surgery for areas of distant metastasis, in some cases may be most helpful and result in prolonged life and comfort. Lobectomy is entirely justified for a solitary metastatic lung lesion. Hood, Clagett and the author[1], in 1955, reviewed forty-three cases in which pulmonary resections were done for solitary lung metastases. Thirty-three per cent of those cases were still alive at the end of a three-year follow-up period, and twenty-seven per cent were alive after a five-year follow-up.

The fact that a patient has had a serious malignancy and later develops a mass in some other area does not always mean that he has developed a hopeless metastatic disease. In such cases proof of metastasis should always be obtained.

Case No. 3.—E. B., a 69-year-old woman, was first seen in June, 1954, with a chief complaint of dysphagia. Studies revealed a carcinoma of the middle esophagus. Esophagectomy and esophagogastrostomy were done on June 22, 1954. She returned in June, 1956, with a complaint of low back pain. A pelvic mass was found on physical examination, and one examiner told her she probably had metastatic disease and nothing should or could be done. A few weeks later, however, she was seen by the author and at laparotomy a large, multinodular fibroid uterus was removed; there was no evidence of metastatic disease in the abdomen, and now four and a half years since she had esophagectomy she has had no evidence of disease. This case illustrates that patients who have had cancer can develop other diseases as well, and each situation should be investigated.

Surgical Operations for Palliation

One hesitates to do radical operative procedures on patients with extensive carcinoma; however, such procedures often may be justified.

Case No. 5—H. F., a 59-year-old man, was seen in December, 1957, with a three-month history of progressive dysphagia and weight loss. Studies revealed a squamous carcinoma of the mid-esophagus with almost complete obstruction. Although it was felt that the case was incurable, it was decided that a palliative esophagocologastrostomy was indicated to reestablish his ability to swallow. This was carried out on January 8, 1958. The right colon was brought into the chest through a substernal tunnel and anastomosed with the cervical esophagus at one end and with the stomach at the other. The ileum was anastomosed to the transverse colon.

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†Sanders Clinic, 20 S. Dudley St., Memphis, Tenn.

The patient recovered and later a thoracotomy proved that the primary lesion was non-resectable. The patient lived ten months after this procedure, and he gained twelve pounds because he was able to eat well until his death.

Other examples of palliative procedures are pulmonary resection for cancer of the lung when it is desirable to remove a focus of sepsis, gastrectomy for obstructive or bleeding cancer of the stomach, and colectomy or by-pass anastomosis of the small or large intestine for obstructive cancer. There are other procedures, neurosurgical in nature, for relief of pain; however, discussion of these is beyond the scope of this paper.

Surgery of the Endocrine Glands and Hormonal Treatment

Surgical intervention has proved of value when the malignancy is dependent upon hormones for its growth, and in some cases when administration of hormones will cause regression of tumor growth. Malignancies which are known to respond to hormonal influence are carcinoma of the breast, carcinoma of the prostate, and carcinoma of the thyroid.

Metastatic carcinoma of the breast will respond favorably to hormonal deprivation or administration in about thirty to fifty per cent of cases. In general, the following methods are those most widely used.

If the patient is premenopausal, then oophorectomy with administration of testosterone is carried out. Routine oophorectomy for all cases of cancer of the breast seems unjustified but has been advised by some[2]. Radiation sterilization appears to be a less dependable method of castration than does surgical castration. Testosterone must be administered in doses large enough to produce signs of masculinization, and usually 100 mg. injected intramuscularly once or twice weekly are adequate.

The preferable treatment for the woman who is at least five years postmenopausal is administration of estrogens. This is given in doses sufficient to produce uterine bleeding or other signs of feminization.

Adrenalectomy is recommended for individuals who have responded to the above treatment but who have recurrence of tumor activity. Adrenalectomy occasionally may be indicated for patients who have no sex hormone administration.

Case No. 4—R. A., a 44-year-old woman, had radical mastectomy for carcinoma of the breast in 1954. In December, 1957, a radical mastectomy of the opposite breast was carried out because of a presumed primary carcinoma in that breast. The following month she began having severe back pain, and a metastatic area was discovered in the fourth thoracic vertebra. The patient was placed on testosterone therapy and given x-ray treatment to the local site. A month later several other metastases were found in the spine and pelvis. It was decided then to do adrenalectomy and bilateral oophorectomy, and this was performed on February 19, 1958. The patient did well and all areas of metastasis in the bones showed evidence of recalcification within three months. It is now one year later; she is doing well; she has no evidence of new metastases, and is maintained on 37½ mg. of cortisone daily.

"Medical adrenalectomy" (the administration of large doses of cortisone to suppress normal adrenal function) has been of benefit in some instances, but is not as dependable a method of ablation of adrenal influence as surgical adrenalectomy. Of course, one must use careful judgment in the selection of cases for such operations. In general, the metastases to bones and soft tissues respond better to this type of treatment than do the metastases to visceral organs.

While the author's experience with hypophysectomy in the treatment of metastatic cancer has been nil, it appears that it is as effective as adrenalectomy but has no particular advantages over it.

Metastases from carcinoma of the male breast will often respond to orchiectomy or to adrenalectomy.

Metastases from carcinoma of the prostate respond favorably to orchiectomy in such a high percentage of cases that this operation has become almost a routine form of therapy even when metastases are not obviously present. The results of treatment of carcinoma of the prostate are as good with transurethral resection and castration as with radical prostatectomy. Estrogen therapy also is very effective in metastatic carcinoma of the prostate, and the survival rate in patients treated with either castration, estrogens, or both, is at least two and one-half to three times that of an untreated group. Adrenalectomy or hypophysectomy are also effective treatments for metastatic carcinoma of the prostate, but are infrequently used because of the high percentage of favorable results with less radical measures.

Carcinoma of the thyroid, particularly the papillary or follicular type of adenocarcinoma, has been shown in some cases to be hormonal dependent. Apparently the thyrotropic hormone in some cases stimulates the continued growth and activity of such tumors. Therapy has been directed toward administration of thyroid extract which, in turn, will cause diminished output of thyrotropic hormone.

Circle[3], Thomas[4] and others have reported remarkably successful cases in which the metastatic tumors have shrunken and even disappeared under treatment with thyroid extract. Thomas recommends that all cases of carcinoma of the thyroid receive thyroid extract postoperatively, and also advises against the prolonged use of antithyroid drugs without concomitant administration of thyroid extract. His dosage recommendation is three grains daily as prophylaxis, and in the treatment of metastasis, either four to six grains of desiccated thyroid daily or 100 to 200 micrograms of triiodothyronine daily until a level of slight hyperthyroidism is reached, as measured either by protein bound iodine blood levels or radioactive iodine uptake. This level of thyroid activity is then maintained indefinitely. Thomas finds that about forty per cent of metastatic thyroid cancer cases respond favorably to this type treatment.

Radiation and the Use of Radioactive Drugs

The most commonly used modalities of radiotion therapy are radiation by use of conventional x-ray therapy machines, radiation by exposure to radiation of radioactive cobalt, use of radium in various forms of applicators, and the ingestion or injection of radioactive elements such as radioiodine, radiogold, and radiophosphorus. These various forms of radiation delivery all produce the desired effect of delivering a tumorcidal dose of radiation to the malignant cells without excessive damage to the normal tissue.

The use of cobalt radiotherapy has decreased greatly burns to the skin and, to some extent, the nausea and malaise that often accompany delivery of tumorcidal doses of radiation. In this respect, this form of treatment has been a decided improvement over previous methods.

In some cases radiation therapy to metastasis may be unjustified; however, it is worthy of trial in all cases when there is severe pain, obstruction of visceral organs or when metastasis is producing undesirable effects such as spinal cord compression and when surgery seems contraindicated. Although only a few carcinomas actually are cured by radiation, most of them are decelerated in growth and many regress for long periods of time.

Case No. 5—E. M., a 47-year-old woman, was seen as an emergency on May 10, 1955, with a history of the onset of vague abdominal pain and distention of two weeks' duration. This pain had become much worse the day before admission, and on examination she presented signs of acute abdominal disease. Laparotomy was advised and revealed peritonitis secondary to rupture of a carcinomatous ovary. Both ovaries were removed but because of the patient's poor condition, hysterectomy was not done. The patient recovered from surgery and received a total tumor dose of 4,000 roentgens given by cobalt teletherapy. In July, 1957, a nodular mass was found in the vesicovaginal arae which on biopsy was reported as adenocarcinoma. Because a small vagina and obesity prevented intravaginal cone irradiation, fifteen milicuries of radon seeds were implanted into this mass. This implantation resulted in complete disappearance of the tumor in three months.

In April, 1958, the patient was found to have a pelvic mass and partial obstruction of the right ureter in the pelvic area. Since no other areas of metastasis were evident, laparotomy was done and a hysterectomy and removal of a large parametrial mass were carried out. The right ureter was divided and implanted into the sigmoid colon. No other evidence of carcinoma was found.

The patient received 3,000 roentgens tumor dose to the pelvic area using cobalt teletherapy. The patient is doing well and has no obvious metastatic disease at present.

The pathologist reviewed all of the tissue and concluded that the patient's disease was adenocarcinoma of the endometrium metastatic to the ovaries and to the vagina.

This case illustrates the use of two forms of radiotherapy combined with surgery.

Radioactive gold, thus far, has been most useful in drying up malignant effusions in the abdomen or chest. Radioiodine is useful in certain metastatic carcinomas of the thyroid. Radioactive phosphorus is used mainly in polycythemia vera and in some cases of leukemia.

Chemotherapy

Although about three to four thousand different drugs are tested each year to determine their effects on cancer, only few are of clinical value at the present time. Nitrogen mustard is the drug most commonly used in the treatmnt of metastatic cancer and has proved more valuable than others. It must be given intravenously, and the dosage varies from .4 to .5 miligram per kilogram of body weight. This is administered over a period of three or four days in a series of divided doses. This dosage may be repeated every few months if deemed necessary, and if the white blood count is not unduly depressed. Thio-Tepa has similar effects as nitrogen mustard and may be of advantage in some cases.

Methotrexate has proved recently to be remarkably effective in the treatment of chorioepithelioma. Its use at the present time, however, is still confined to the larger centers for clinical experimentation in neoplastic diseases.

Summary

When an individual develops metastasis from cancer, it may or may not portend approaching death. In the majority of cases, the use of surgery, radiation, hormone therapy or chemotherapy separately but usually in combination, produces effective palliation. In many cases it has produced long periods of tumor regression or arrest, and in some cases, may produce apparent cure.

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Construction of Artificial Vagina

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Construction of an artificial vagina is an important surgical problem when congenital agenesis of the vagina is found to be present in a young woman who otherwise appears to be a normal individual and who wishes to be married. A number of different methods have been used in an effort to solve the problem. Some have attempted to correct the situation by creating a space between the rectum and bladder by dissection, placing a splint in the area for a long period of time hoping that the cavity would eventually become lined with epithelium. This rarely occurs and such a cavity is likely to contract rather markedly since the normal cicatricial processes tend to close the cavity.

Baldwin[1] and others have used transplanted segments of intestine to form the vaginal canal. In some cases a loop of small bowel has been utilized while in other cases a segment of redundant sigmoid colon has been selected. Counseller[2], Mc Indoe[3] and others have reported upon the use of free skin grafts in such cases while others have utilized labial grafts.

Complications have occurred with all methods and the problem continues to be one which taxes the ingenuity of the surgeon. It appears to the author that the most satisfactory primary operation is one that utilizes a free thick split graft over a sponge rubber stent to fill the cavity which is carefully dissected out between the rectum and the bladder. For a secondary operation some form of the Baldwin type of operation, utilizing a segment of intestine may be wise. Complications which have been reported following these operations include vesicovaginal fistula, rectovaginal fistula, hemorrhage from the vagina, seropurulent vaginal discharge and contracture of the newly created organ. Regardless of the method chosen, great care must be exercised in performing the operation and this must be followed with careful postoperative management and supervision of the patient.

This report deals with the successful construction of an artificial vagina in a young woman, utilizing a dermatome skin graft to line the cavity. The technique used and the postoperative management employed will be given in detail.

CASE REPORT

M., WF, AGE 18, was referred by Dr. W. E. Berry with a diagnosis of congenital absence of the vagina. Prior to being seen by the author the possibility of imperforate hymen had been entertained and an incision made in the area, however, no vagina was found. The patient complained of some slight nervousness, but in general appeared to be in good health. Examination revealed a well developed young woman who appeared to be healthy. The general physical examination allowed one to palpate an organ, considered at the time of the original examination, to probably represent the uterus but as will be shown below proved to be a solitary pelvic kidney.

Realizing that about one-fourth of the patients with congenital absence of the vagina have other associated anomalies of the urogenital tract, urological consultation was requested. The urological consultation established the fact that the patient possessed only one kidney, and that this was located low in the pelvis. After completion of the study the situation was explained to the patient and to her mother. It was explained that the absence of the vagina was not likely the cause of the patient's nervousness and it was suggested that operation for construction of an artificial vagina might well be delayed until the patient had plans for marriage.

Four years later the patient returned requesting operative correction of the anomaly, since she planned to be married. Examination at the time of hospital admission did not reveal any new findings.

OPERATION: On June 28, 1958, the patient was operated upon. An exploratory laparotomy was first done through a short mid-line incision. This revealed the presence of normal ovaries and tubes but total absence of the uterus. The pelvic kidney was of course found. Following this, a thick split graft, twelve one-thousandths of an inch in thickness was taken from the inner thigh with the Reese dermatome. The patient was then placed in the lithotomy position, the bladder emptied with a catheter and the dissection of the space begun. The space between the urethra and the rectum was gradually opened utilizing both sharp and blunt dissection. Great care was taken at all times in an effort to avoid injury to the urethra and bladder above, and to the rectum below. Also every effort possible was made to maintain a dry field in the cavity as it was developed. The thick split graft was sutured over a sponge rubber stent, covered by the split skin graft, was then inserted into the newly created cavity. The graft appeared to fit quite snugly against the walls of the cavity. Interrupted sutures of silk were then placed in the labia minora in order to hold the graft in place. A small opening at the top of the incision was left for drainage. The patient tolerated the procedure very well.

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On the seventh post-operative day the sutures were cut and the stent removed and replaced. Following this, irrigations of the cavity were begun using a sterile catheter and a 1 per cent solution of acetic acid daily as an irrigating solution. Because of the difficulty of inserting the sponge rubber splint and because of the necessity of keeping some prosthesis in the newly developed skin lined cavity a different type of prosthesis was sought. A standard white rubber tea, of the type used in feeding pails by the dairy industry, was utilized for the purpose.

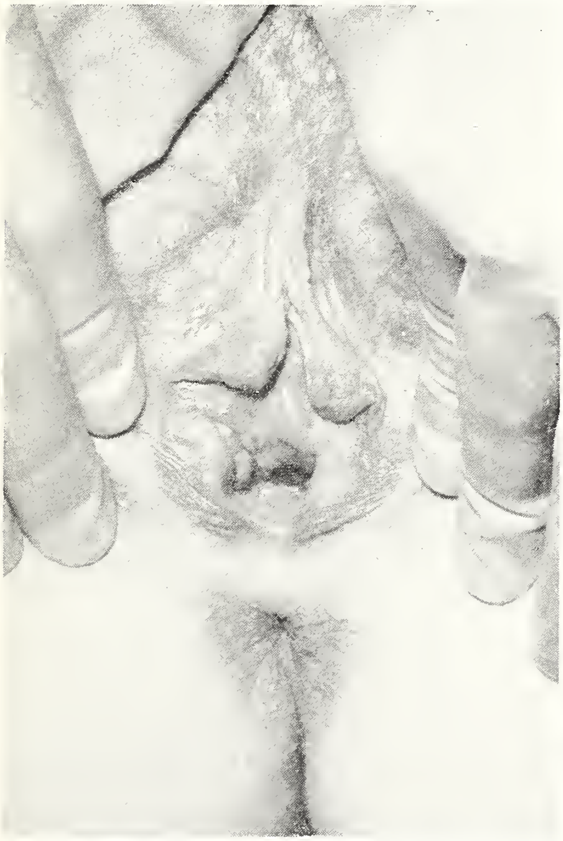
Fig. 1. Photograph of artificial vagina taken approximately six weeks after construction.

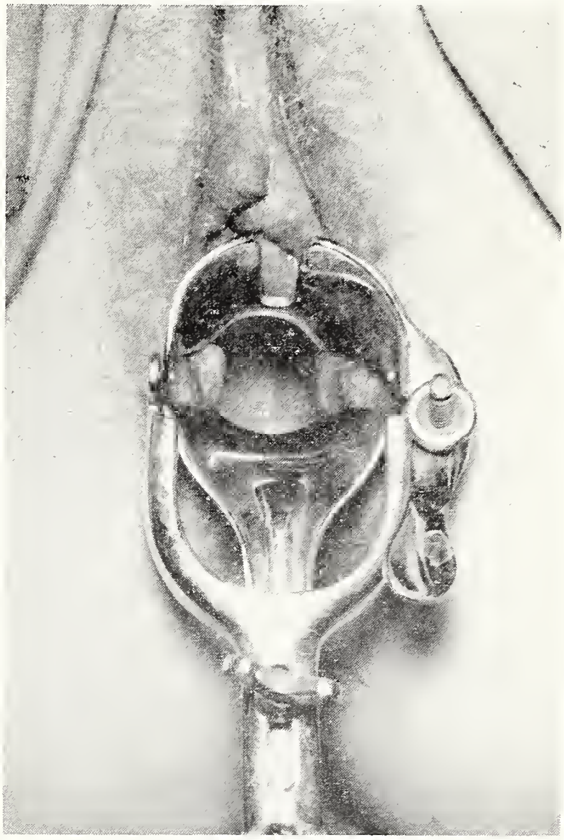
Fig. 2. Artificial vagina with speculum in place to show wrinkled split skin graft which lines the cavity.

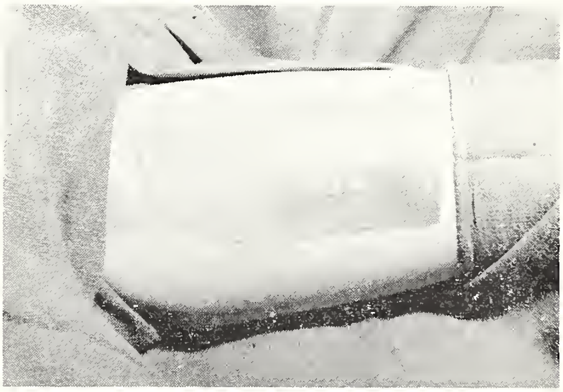
Fig. 3. Inner aspect of thigh showing healing where dermatome skin graft was obtained for use in construction of vagina.

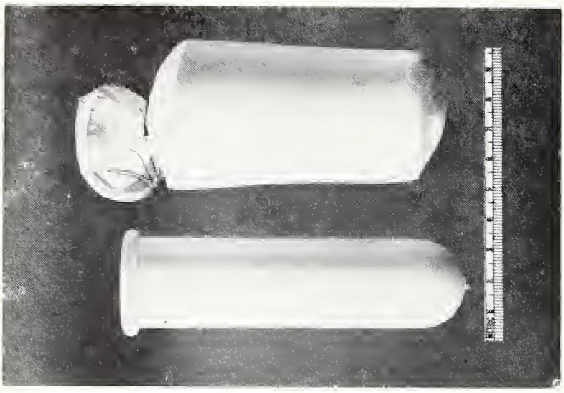

Fig. 4. Sponge rubber stent covered with condom. Skin graft was sutured over mold before being placed in cavity. Rubber dilator worn for several weeks following removal of stent.

This seemed much safer than the regular lucite splints which have been developed, for the purpose, and which are available through the larger surgical supply houses. The rubber dilator was held in place by a sanitary pad. The splint was worn day and night by the patient for several weeks and later was worn only at night. Careful rectal examinations were done during the post-operative course to see whether or not any hematoma or purulent collection might have formed near the graft. None occurred. The junction between the skin graft and the skin of the labia gradually epithelialized and the area was completely covered with skin. After leaving the hospital, the patient was advised to take hot sitz baths daily for a few weeks and also to use a cleansing douche.

Follow-up examinations revealed the patient to be in good condition. The vagina admits two fingers on examination and is of about normal depth. The standard speculum reveals the cavity to be completely covered with pink appearing skin which has a wrinkled appearance as the speculum is withdrawn.

Twelve weeks after operation, the patient was married and has since been enjoying a normal marital relationship.

Summary and Conclusions

1. Surgical methods used for the construction of an artificial vagina are reviewed.
2. Some of the complications that may be encountered are cited.
3. The use of a thick split graft over a sponge rubber stent is believed to be one of the most satisfactory procedures in the surgical treatment of the anomaly.
4. A successful case is reported, the artificial vagina being constructed.

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PHYSICIAN-INTEREST IN EDUCATION AT THE HIGH SCHOOL LEVEL

Let us put an academic scholarship achievement award program in every high school to help America win "the cold war of the classrooms."

How well we succeed in educating each and every child to the maximum of his inherent potential will ultimately determine his fate and our own. Upon the success of such an educational plan may depend the outcome of the world struggle between communism and the free peoples.

Half of our brightest high school graduates do not go to college. These are the youth who are our potential leaders and would profit most by a college education. The result: Huge loss of a precious natural resource. The Soviet goal is to pass the U. S. and thereby gain world leadership and world communism. They plan to do this by education, hard work and scientific supremacy. We are, therefore, engaged with Russia in what has aptly been called "the cold war of the classrooms." We cannot afford to lose this "cold war," if America wishes to maintain its leadership in world affairs and escape world communism domination; yet we are severely handicapped because so many talented high school students do not take the proper subjects, and do not go to college.

What can YOU, as a physician, do about this? Lend YOUR influence to help your County Medical Society grant Academic Scholarship Achievement Awards, to the upper 10 per cent of the seniors in the high schools in your city and county, like the Adams County Medical Society and its Foundation have done in Quincy and Adams County, Ill. Write the Swanberg Medical Foundation, W. C. U. Building, Quincy, Ill., for details.

Cyanosis in the Newborn Infant

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INTRODUCTION

Cyanosis in newborn infants is one of the most common problems seen by physicians engaged in the care of patients in the pediatric age group. This condition is often transitory and of little real significance. On the other hand, it frequently is severe and persistent, and may be an important presenting symptom of serious underlying disease. Especially is this true in prematurely born infants. Diagnosis of the etiology of cyanosis may be easy in many patients. However, accurate and early determination of the cause is often a perplexing problem. It is the purpose of this paper to present the causes of cyanosis in newborn infants. Emphasis will be given to the diagnostic features of the various conditions that may produce cyanosis.

Classification of Causes

Classification of the etiology of cyanosis in newborn infants is best based on pathologic physiology. This approach clarifies diagnosis and therefore may be of aid in institution of early and effective therapy. The key to classification of the causes of cyanosis is a knowledge of the mechanisms necessary for normal respiration. These mechanisms are: (1) an actively functioning respiratory center, (2) intact nervous pathways, (3) muscles capable of respiratory effort, (4) patent larger air passages, (5) open alveolar ducts and alveoli, (6) hemoglobin capable of carrying oxygen to the tissues, (7) efficient circulation, and (8) receptive tissues. Each of these factors and the various conditions that may be responsible for disturbing their functions will be discussed.

1. Actively functioning respiratory center. In newborn infants, it is essential that the respiratory center be anatomically and functionally mature. Prematurely born infants are especiallv handicapped in this respect since capillary development in the center may be inadequate. Function of the respiratory center also may be impaired by anoxia, hemorrhage, edema or narcosis. Prevention of these impairments is usually related to obstetrical factors. Suffice to say, a careful and thorough history of the mother's pregnancy and labor and the events surrounding birth of the baby are frequently indispensable in determination of the cause of respiratory difficulty in a newborn infant.

2. Intact nervous pathways. Damage to the nerves occurs principally in infants born by breech delivery. Not only may cervical cord injury result but the phrenic nerve may be involved and cause eventration of the diaphragm and Erb's paralysis of the arm. This type of paralysis is almost always unilateral, involving only the upper arm in the majority of patients. Diagnosis is seldom difficult since one can see that the arm is limp at the infant's side and is rotated inwardly. The forearm is pronated causing the palm of the hand to face backward or even outward. If the phrenic nerve is also involved a roentgenogram of the chest will show the diaphragm to be elevated on the same side as the arm paralysis.

3. Muscles capable of respiratory effort. In order for respiration to be initiated in the newly born infant the muscles of respiration must be sufficiently strong to expand the lungs. This action may be impaired in small premature infants as well as in infants who have specific pathologic conditions involving the muscles of respiration. Examples of the latter are amyotonia congenita, myasthenia gravis and poliomyelitis. Amyotonia congenita, a rare disease, is characterized by generalized muscle flaccidity, shallow respiration, weak cry and paradoxical collapse of the thoracic wall on inspiration. Myasthenia gravis is also a rare disease, usually occurring in infants born to mothers who also have the disease. Poliomyelitis may begin in utero and the infant show evidence of muscular weakness in the immediate newborn period. Cyanosis occurs if the muscles of respiration are involved. In addition to these conditions, phrenic nerve injury with resulting impairment of diaphragmatic function should be considered as a possible cause of inability of the respiratory muscles properly to expand the lungs.

4. Patent larger air passages. The larger air passages must be patent in order to admit oxygen to the alveolar spaces. These passages may be obstructed by (a) choanal atresia, (b) micrognathia, (c) lingual thyroid, (d) laryngeal lesions, and (e) aspiration of fluids and other material at birth or in the post-natal period.

(a) Choanal atresia. This is caused by persistence of the embryonic buccopharyngeal membrane at the junction of the nasal cavity and the nasopharynx. If bilateral, there may be marked dyspnea which is aggravated by nursing. Diagnosis is established by inability to pass a rubber catheter through the external nares into the nasopharynx. (b) MICROGNATHIA. Serious interference with the infant's respiration may result from micrognathia (hypoplasia of the mandible). Survival of the infant may depend upon use of prone position, establishment of an airway by a plastic mouthpiece over the tongue, nasogastric tube for gavage feeding, and at times tracheotomy. (c) LINGUAL THYROID. Abnormal location of thyroid tissue, if in the base of the tongue or beneath the tongue, may produce persistent obstruction in the pharynx, thereby causing cyanosis. (d) LARYNGEAL LESIONS. Obstruction of the larynx may be caused by a variety of conditions. Direct laryngoscopy is necessary for accurate diagnosis. One may suspect laryngeal obstruction if there is inspiratory stridor accompanied by recession of the soft parts of the chest wall. If these findings are associated with cyanosis, paralysis of the vocal cords due to nerve injury, abnormally small larynx, congenital laryngeal webs, redundant subglottic mucosa or congenital laryngeal stenosis may be responsible for the clinical picture. Wren stridor is present, probably the most common condition seen is an unduly long epiglottis in which case cyanosis seldom occurs except with crying. (e) ASPIRATION OF FLUIDS. All newborn infants should be fed while being held in the lap or arms of the nurse or attendant. Aspiration of water or formula constitutes a real hazard and all too often has produced sudden death due to obstruction of the larger air passages. This possibility should be considered in any infant who becomes cyanotic suddenly while seeming to do well otherwise. Esophageal atresia may be responsible and is characterized by the infant's having excess quantities of mucus and saliva coming from the mouth, and choking and becoming cyanotic with each attempt to take water or formula. Diagnosis may be confirmed by instilling 1 cc of iodized oil in the upper pouch by catheter and then making a roentgenogram. The iodized oil should be removed after this procedure.

5. OPEN ALVEOLAR DUCTS AND ALVEOLI. The finer air passages must also be open in order to permit absorption of oxygen in the alveoli. There are four principal impairments to this mechanism: (a) failure of the lungs to expand, (b) filling of the smaller passages with obstructing material, (c) coating of the alveolar walls, and (d) external pressure.

(a) FAILURE OF THE LUNGS TO EXPAND. In very small premature infants, the amount of elastic tissue in the lung parenchyma is not as great as that found in full-term infants. Due to this underdevelopment, premature infants are handicapped and often cyanotic. Respiration may have been initiated spontaneously, but has continued with insufficient force to produce full expansion of the alveoli. When this occurs, the clinical condition is called alveolar atelectasis. Cyanosis, dyspnea, and substernal and subcostal retraction are outstanding features. Roentgenographic examination of the chest reveals small, generalized, patchy densities throughout both lung fields. If the infant survives for a period of 72 to 96 hours, the prognosis is usually good. (b) FILLING WITH OBSTRUCTING MATERIAL. The smaller air passages may become obstructed with amniotic fluid, vernix caseosa, meconium, blood and other aspirated materials. Exudation of inflammatory material into the alveoli with pneumonia may also be responsible for obstruction of the finer air passages. (c) COATING OF THE ALVEOLAR WALLS. This occurs chiefly in so-called hyaline membrane disease. Although the etiology of this condition is not fully understood, it is known that the alveoli walls become coated with a homogeneous material which inhibits the absorption of oxygen into the circulating blood. Hyaline membrane disease occurs principally in premature infants, babies born by cesarean section and in those infants delivered of diabetic mothers. It is said to be the cause of death in 30 to 40 per cent of the deaths in premature infants. Dyspnea and cyanosis may appear either immediately after birth or be delayed for several hours. Marked substernal retraction is an outstanding clinical finding but is not always present. (d) EXTERNAL PRESSURE. The lungs may be prevented from expanding by a variety of conditions producing external pressure on the lung tissue. These include: (1) tension pneumothorax, (2) mediastinal emphysema, (3) lobar emphysema, (4) diaphragmatic hernia, (5) congenital tumors, and (6) congenital cysts.

(1) TENSION PNEUMOTHORAX. Either mild or severe dyspnea and cyanosis may be produced by spontaneous tension pneumothorax. Presumably this condition results from rupture of the alveoli. Intrathoracic pressure increases on the affected side shifting the mediastinum toward the opposite side and completely or partially collapsing the lung on the involved side. X-ray examination of the chest will demonstrate varying degrees of lung collapse. In severe cases immediate release of the pressure may be life-saving. When a mild pneumothorax is present only conservative measures may be necessary. (2) MEDIASTINAL EMPHY-

sema. About 10 per cent of newborn infants have collections of air in the anterior mediastinum which may be seen in the lateral x-ray of the chest. This is probably due to rupture of the alveoli. Seldom is the emphysema of such severity as to cause cyanosis and dyspnea. (3) Lobar emphysema. This condition is more correctly designated congenital unilobar obstructive emphysema. The etiology may be redundant bronchial mucosa, collapsible bronchial cartilage or aberrant blood vessels, but frequently there is no demonstrable cause. Usually, either the right upper or right middle lobe of the lung is affected. Lobar emphysema is not to be confused with lung cyst. The microscopic pathology differs markedly, lobar emphysema presenting the picture of overly dilated alveoli with little change in the histologic character of the lung tissue. X-ray examination of the chest confirms the diagnosis. An emphysematous lobe is seen often with compression of adjacent lobes on the affected side. There is shift of the mediastinum to the opposite side. (4) Diaphragmatic hernia. Congenital defects of the diaphragm, the underlying cause of diaphragmatic hernia, occur more frequently on the left side. When symptoms from diaphragmatic hernia appear soon after birth they usually are cyanosis, dyspnea, rapid respirations, sunken abdomen and overdistended chest. Vomiting may also occur. The heart is displaced, usually toward the right side, and auscultation of the chest reveals sounds of peristalsis. Positive diagnosis may be made by a plain roentgenogram of the chest, especially when a large part of the alimentary tract is in the thoracic cavity. If the deformity has occurred early in intra-uterine life, the lung may be rudimentary and markedly hypoplastic, in which case the prognosis is very guarded despite early attempts at surgical correction. (5) Congenital tumors. Neoplasms of the congenital type are extremely rare. (6) Congenital cysts. Most lesions in the lung that are called cysts are in reality emphysematous blebs or lobes. True congenital cysts are rare entities. They may be large or small, single or multiple. Only the large cysts produce symptoms and do so by crowding out normal lung tissue.

6. Hemoglobin capable of carrying oxygen to the tissues. Methemoglobinemia may result from aniline dye poisoning and ingestion of nitrates found in well water. The infant appears to have severe cyanosis but the diagnosis is clarified by noticing the chocolate color of the blood when finger or heel puncture is performed. Transport of oxygen also may be impaired in conditions causing severe anemia such as hemolytic disease of the newborn.

7. Efficient circulation. In order for oxygen to be available to the tissues the circulation must be efficient. It may be impaired in severe central nervous system damage, adrenal hemorrhage, sepsis, myocarditis, and in a variety of congenital heart lesions.

8. Receptive tissues. The tissues must be capable of receiving oxygen. Histotoxic damage from drugs and other substances is theoretically possible but is an improbable occurrence.

Diagnostic Clues

Although roentgenographic examination of the infant is a major tool in arriving at an accurate diagnosis when cyanosis is a prominent symptom, certain clinical observations may be helpful. Shallow, irregular respirations suggest that central nervous system impairment may be the cause. Dyspnea as a major accompaniment of cyanosis indicates an obstructive cause. When cyanosis is present with normal respiration a congenital heart lesion or methemoglobinemia may be responsible. Failure of oxygen to help or abolish cyanosis also suggests methemoglobinemia. Cyanosis, associated with rapid pulse and shock-like appearance of the infant, is indicative of a circulatory cause.

Summary and Conclusions

1. Classification of the etiology of cyanosis in the newborn infant is presented.
2. Emphasis is placed on the diagnostic features of the various conditions responsible for cyanosis.
3. Roentgenographic examination of the chest is an extremely useful tool as an aid to diagnosis. Early use of x-ray and utilization of portable films are frequently responsible for immediate diagnosis of the cause of cyanosis.

Acknowledgement

Doctor James G. Hughes, Professor of Pediatrics, University of Tennessee College of Medicine, has developed the outline and presentation of material followed in this paper. Doctor Hughes has utilized this method of classification of etiology in teaching students and house staff physicians for the past several years.

The Preservation of Renal Parenchyma by Conservative Surgery

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During the past thirty years there has been a revival of the use of conservative surgery for the preservation of renal parenchyma. All too frequently nephrectomies have been performed where the pathological entity was limited to a small, definite area of the kidney or ureter. In many instances, surgical correction or excision of such lesions would have given the patient an asymptomatic kidney with satisfactory function. It is the purpose of this paper to review briefly the general considerations, criteria, and the disease entities which are especially suitable to conservative surgery.

General Consideration

The conservative surgical philosophy is not new since Czerny in 1887 performed the first partial nephrectomy only eighteen years after the first total nephrectomy was accomplished by Simons. Partial nephrectomy was employed fairly frequently during the early part of this century but fell into disrepute due to poor results and high mortality. Since that time there has been marked improvement in our understanding of renal physiology and pathology, and extraordinary advances have been made in surgical techniques, diagnostic methods, and agents with which we can combat infection. Uninhibited nephrectomy or permanent ligation of the ureter for the purpose of producing a silent non-functioning kidney is to be condemned.

It is common knowledge that we are normally brought into the world with a lavish abundance of renal parenchyma. Indeed, this is the reason nephrectomy, which is usually the easier procedure, has been frequently employed in the past. We now know that generally the normal individual can maintain life on one quarter of the total renal mass. In addition, the kidney has amazing recuperative powers and what may initially appear to be a severely damaged kidney can return to normal or near normal in appearance and function when adequate surgical corrective measures have been performed. Each case must be evaluated as to its specific characteristics however, and a conservative course should not be attempted when the kidney is hopelessly beyond redemption. In general, conservative measures are associated with fewer good results in the elderly patient since the recuperative power of the kidney naturally declines with advancing years. However, the older patient will often require a conservative approach since the uninvolved kidney may be damaged by processes commonly associated with this age group such as nephrosclerosis, chronic pyelonephritis, etc. Such patients need all of the renal parenchyma that can possibly be salvaged.

Criteria

Cases for conservative surgery will fall into two major categories: mandatory and optional. The mandatory group is composed of individuals with a solitary kidney and ureter, whether acquired or congenital, and those with bilateral renal or ureteral involvement where doubt exists that life can be maintained with a single kidney. Included in the optional group are patients with renal calculi, localized hydronephrosis or pyonephrosis, vascular disease, ureteropelvic obstruction, congenital anomalies of the kidney, certain types of cystic disease, renal trauma, and hydronephrosis secondly to ureteral obstruction whether due to calculus, injury, or stricture. In any disease where conservative surgery is to be considered certain criteria have to be met. These are:

1. The primary process should be sharply confined to one area.

   Although radiographic study of the kidney usually gives a good indication as to degree of involvement, the final decision in some instances can not be made until the kidney is explored.

2. The kidney or portion thereof must have an adequate blood supply and should sustain one-half or preferably more of the total function of a normal kidney.

   This criterion is especially important where doubt exists as to the salvagability of the kidney or when both kidneys are affected by the pathological entity. Excretory urography alone is notoriously unreliable in such instances and differential renal function tests such as phenolsulfonphthalein and creatinine are mandatory. If doubt still exists following such investigation and especially if the pathologic etiology is vascular in nature, renal arteriography should then be employed

3. The procedure should not produce any obstruction to the calyces, renal pelvis or ureter.

When the first two criteria are met the surgeon usually has a fairly accurate estimation of the salvagability of the kidney. As in any other phase of medicine there are border line cases and occasionally the economic factor should be considered. For example, a family wage earner should not risk prolonged disability when the result is doubtful and there is a normal kidney on the opposite aside.

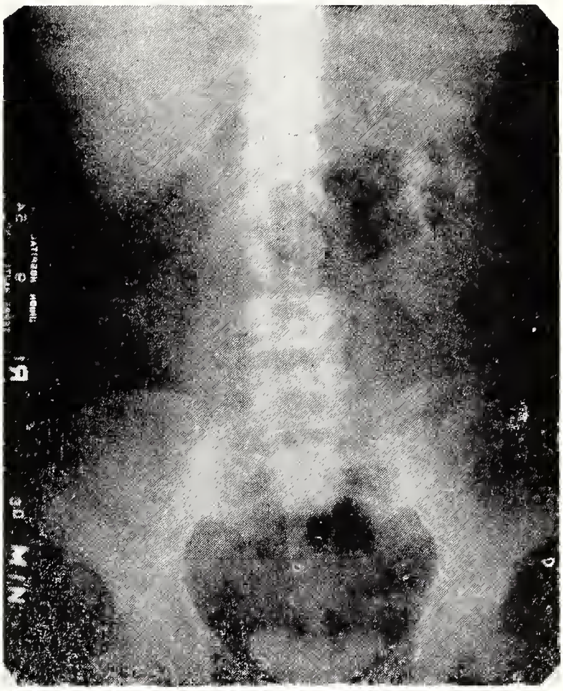
Conditions Compatible With Conservative Surgery

NEPHROLITHIASIS: Calculus disease presents the most frequent opportunity for the practice of conservative renal surgery. Simple pelviolithotomy, nephrolithotomy, or a combination of the two are time-proven procedures. It should be remembered, however, that localized hydronephrosis or pyonephrosis secondary to obstruction may produce or be the result of a calculus especially when present in the lower pole of the kidney. In general the surgical considerations are the same for both conditions. Under such circumstances simple removal of the calculus results in recurrent stone formation and persistent renal infection in 15-25 per cent of the cases as shown by the collective review by Abeshouse and Lerman. Partial nephrectomy with removal of the damaged renal parenchyma (Fig. 1) offers the best prognosis with reference to continued destruction from infection or recurrent calculus formation.

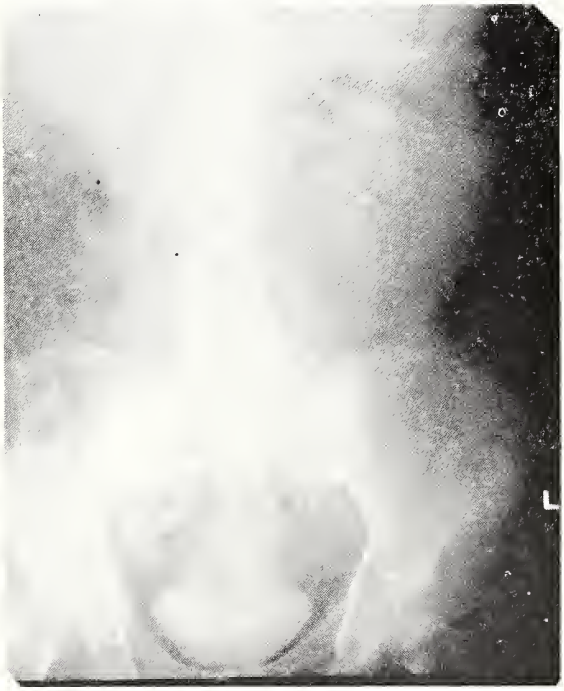
Although large staghorn calculi are certainly the most difficult to remove, they are usually associated with infection and obstruction and will destroy the entire kidney if left alone. Occasionally the diagnosis is made before marked destruction has developed and every effort should be made to conserve the

Fig. 1. Mrs. G. F., No. 167284 — 49-year-old white woman with localized calculous pyonephrosis involving the superior pole of a left solitary kidney.

A. Plain film demonstrating two calculi in the superior infindibulum.



B. 30-minute urogram. Note that there is no function in the superior major calyx.



C. Postoperative urogram made seven months after nephro-pelviolithotomy and partial nephrectomy of the superior pole. No recurrence of stone after two-year follow-up.

kidney. The removal of such a calculus entails more risk as it is necessary to employ a very extensive nephrotomy or multiple incisions. Careful consideration of the patient's age, general health, and the status of the opposite kidney must be utilized if the mortality is to be kept at a minimum. The size of the stone per se, however, is no indication for the use of nephrectomy.

URETEROPELVIC OBSTRUCTION: Progressive hydronephrosis secondary to ureteropelvic obstruction has been the source of a high percentage of satisfactory results obtained with conservative surgery by urologic surgeons. It should be noted that the term "progressive hydronephrosis" is used. Occasionally a mild degree of pyelectasis without caliectasis associated with normal function and only minimal impairment of drainage is seen. In such instances, if recurrent renal infection is not present it is preferable to observe the patient at regular intervals as the degree of obstruction may not increase. Once infection intervenes or the magnitude of hydronephrosis increases surgical intervention is definitely indicated.

The excretory urogram or retrograde pyelogram usually gives good indication as to the salvagability of the kidney since the thickness of the renal parenchyma is frequently demonstrated. In the past an anomalous vessel crossing the ureteropelvic junction was thought to be the obstructive factor. It is now known that simple ligation of such a vessel will frequently produce poor results since the true obstructive lesion may be an unrecognizable stricture of the ureter. When an anomalous vessel is present at the ureteropelvic junction, the renal pelvis should always be opened and the outlet calibrated. In addition, if the renal pelvis is markedly enlarged it should be resected for the purpose of reducing its capacity. Such pelves are hypomotile and although the obstruction is adequately relieved a large amount of residual urine may still remain, resulting in chronic infection.

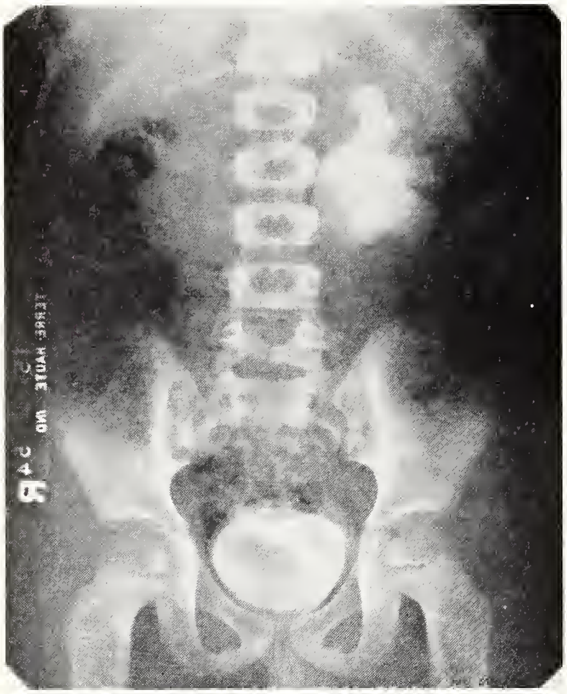
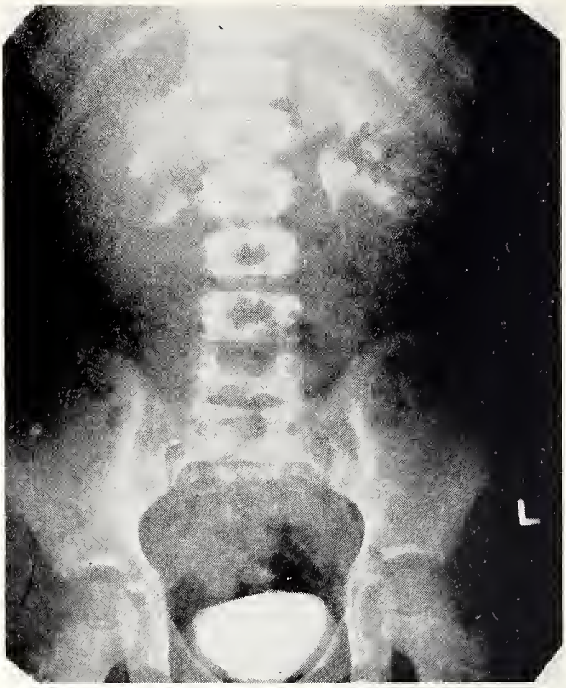


Fig. II. Master J. W., No. 45675 — 6-year-old white boy with recurrent left pyelonephritis; uretero-pelvic obstruction secondary to congenital stricture.

A. Preoperative delayed four hour film following excretory urography.



B. Excretory urogram one year following Foley-Y plasty correction of the obstruction. Patient asymptomatic and urinalysis normal.

Since uretero-pelvic obstruction is usually of congenital origin, such as stricture or high insertion of the ureter into the pelvis, many of these cases are discovered in children or young adults with a history of recurrent urinary tract infection. (Fig. 2) The recuperative power of the kidney, therefore, is at a maximum and provides a good chance for repair of the destruction already produced. In addition, the younger patient's life expectancy is generally excellent and the individual may very well need the salvaged kidney later in life.

CONGENITAL ANOMALIES: Probably the most suitable anomaly of the kidney for conservative surgery is the so-called "double or duplicated kidney." This, however, is actually an anomaly of the ureter which in fetal life has split, forming two renal pelves. The upper segment of the duplicating kidney is much more frequently involved with disease while the lower retains normal function and architecture. Obstruction of one of the segments at the level of the ureter or uretero-pelvic junction may be relieved by side-to-side anastomosis, uretero-pelvic anastomosis or by a plastic operation on the uretero-pelvic junction. Should either segment be hopelessly damaged, the uninvolved portion can still be conserved by means of hemi-nephrectomy. In some instances there is complete duplication of the ureter with two ipsilateral ureteral orifices. A non-malignant lesion which requires sacrifices of the intramural portion of the involved ureter can be treated satisfactorily by re-implantation of the ureter into the base of the bladder.

In recent years conservative surgery has been applied to more severe anomalies of renal form and I refer to the horseshoe kidney. Although partial nephrectomy, heminephrectomy and relief of ureteropelvic obstruction have been performed on this anomaly for many years, the peculiar anatomy of the horseshoe kidney has now been recognized as an obstructive factor. Thus the reversed longitudinal axis of the renal pelves with the inferior ends pointing medially instead of laterally may result in obstruction due to a relatively high insertion of the ureter. Provided no other obstructive factor is present, division of the isthmus associated with nephropexy as described by Foley, Lowsley, and Culp and Winterringer, corrects the abnormal anatomical relationship and results in a dependent ureteropelvic junction. Frequently, however, such a procedure is prevented because of the markedly anomalous blood supply or involvement of the isthmus with the vena cava and/or aorta. When feasible, division of the isthmus enhances the prognosis of plastic ureteropelvic surgery with regard to an ultimate satisfactory result. (Fig. 3)

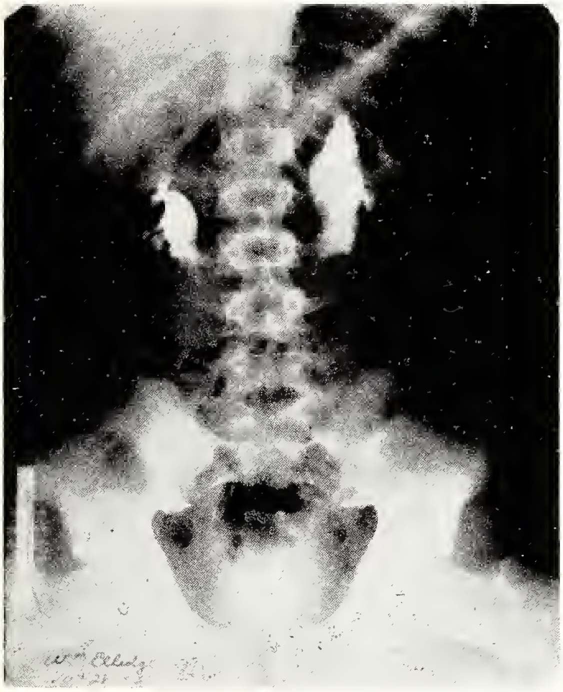
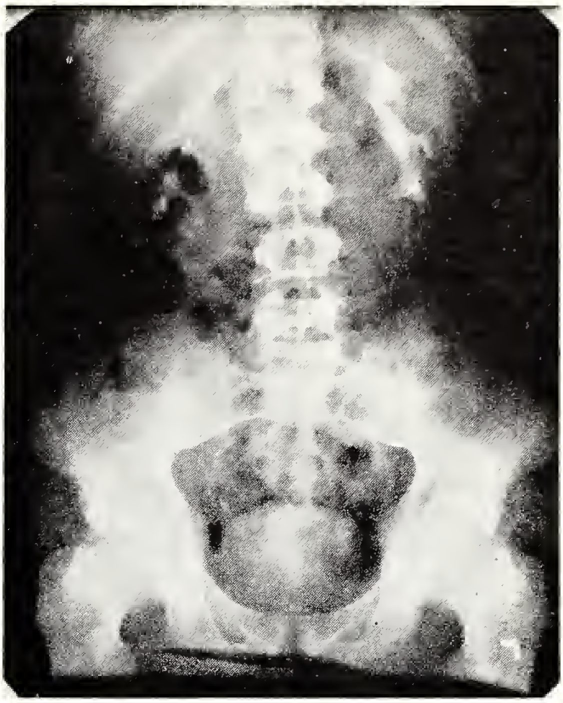


Fig. III. Master W. B., No. 165513 — 15-year-old white boy with mild aching left flank pain and gross total hematuria of three days duration.

Diagnosis: Horseshoe kidney with bilateral uretero-pelvic obstruction; congenital uretero-pelvic stricture present on the left and obstruction on right due to reversed axis of the kidney and relatively high insertion of the ureter.

A. 10 minute delayed retrograde pyelogram demonstrating bilateral obstruction.



B. 25 minute excretory urogram 6 months after division of the isthmus, right nephropexy, and left Foley-Y plasty. Patient asymptomatic and mildly elevated blood urea nitrogen has returned to normal level.

SOLITARY OR MULTIPLE CYSTIC DISEASE: Although cysts of the kidney are generally considered to be benign, they unquestionably destroy renal parenchyma due to pressure atrophy. We have had the opportunity in the past two years to remove a solitary cyst in a surgical solitary kidney. Repeated examinations over a period of years revealed that this lesion had definitely increased in size and in addition, was causing discomfort when the patient wore tight-fitting clothing. Such cysts are easily unroofed, the remaining endothelial lining being coagulatedand the defect filled with fat. Occasionally the cyst may be situated entirely within the renal parenchyma and the question arises as to the presence of a neoplastic tumor. Aspiration of the mass rather than open exploration usually settles the question and is preferable to open exploration which might result in spreading of tumor cells. It should be remembered that between five and ten percent of cysts may contain a tumor and if the aspirated fluid is hemorrhagic the incidence rises to approximately 25 percent. Therefore in the presence of bloody fluid, a total nephrectomy should be performed provided there is a good kidney on the opposite side. Otherwise a partial nephrectomy is the procedure of choice.

We have recently encountered a parapelvic cyst within the hilum of the kidney with a visible area no larger than 1 cm. in diameter between the renal pelvis and the vascular pedicle. Since excision of such a small area might very well lead to recurrence, the problem was satisfactorily managed by anastomosing the cyst and renal pelvis so that it could drain effectively. The patient is now asymptomatic, the pyelogram is normal and her urine is free of infection.

RENAL TRAUMA: Renal injuries usually respond to medical treatment but if extravasation occurs as demonstrated by urography or retrograde pyelography or if the patient's course is unsatisfactory surgical exploration is indicated. Occasionally only partial nephrectomy need be performed but the surgeon should be completely satisfied that the renal pedicle itself is not damaged beyond repair.

VASCULAR DISEASE: During the past five years marked advances have been made in the diagnosis and surgical management of vascular disease involving the renal pedicle. Such pathological entities as aneurysm and congenital stenosis of the renal artery are being successfully demonstrated with the use of renal arteriography. There should be good teamwork between the urologist and vascular surgeon since a graft of the renal artery may be employed. This phase of conservative surgery is still in its infancy and not enough time has elapsed for a thorough evaluation of the results. There is every reason to believe that an increasing number of kidneys will be salvaged which otherwise would have been sacrificed.

URETERAL OBSTRUCTION: This group includes ureteral obstruction whether due to calculus, non-specific stricture, or ureteral trauma. Many factors, such as the degree of obstruction to the ureter, whether partial or absolute; the elapsed time between onset of obstruction and the diagnosis of the lesion; the magnitude of the obstructive lesion and its location must be considered. For example, most textbooks of urology state that approximately three weeks is the maximum duration that one can expect restored renal function from a completely ligated ureter. My teacher and associate, the late Dr. Thomas D. Moore however, observed one patient in which the ureter had been completely occluded for three months with no visible efflux of urine and some residual renal function was still present.

The old adage that an ounce of prevention is worth a pound of cure is never more applicable than in the case where difficult pelvic surgery is to be performed. Certainly preliminary excretory urography and preoperative indwelling ureteral catheters would aid the treatment of inadvertent injuries or prevent their occurrence. Partial ligation of the ureter discovered at the time of surgery would be easily treated with removal of the suture and allowing the ureteral catheter to remain indwelling for a few days post-operatively. When such precautionary measures have not been taken simple deligation may be performed within the first 48-72 hours, but should only be attempted with the aid of the cystoscopist who can more easily identify the level of ligation with a fairly large ureteral catheter. Following relief of the obstruction the catheter is inserted to the renal pelvis and left indwelling. Deligation without the aid of the retrograde catheter is especially hazardous when bilateral ureteral occlusion is present and has been associated with a mortality rate as high as 90 percent. Should complete bilateral obstruction persist longer than 48 hours deligation should not be attempted without prior benefit or urinary diversion. When marked oliguria or anuria occurs following pelvic surgery there is no excuse for considering a diagnosis of so-called reflex anuria. Immediate cystoscopy for the purpose of ruling out ureteral occlusion is mandatory.

More severe injuries, such as complete interruption of the ureter, require surgical repair. If discovered at the time of surgery and the injury has occurred at a low level, reimplantation of the ureter into the base of the bladder is preferable to reanastomosis. Uretero-ureterotomy utilizing the Davalos technique is the procedure of choice for the higher lesions. Should the patient's general condition contraindicate prolonging the operative time for immediate repair, a temporary protective ureterotomy or even cutaneous ureterostomy can be performed. The ureter can then be dealt with permanently under more favorable circumstances at a later date.

Ureteral obstruction which is discovered late in the post-operative course is treated in essentially

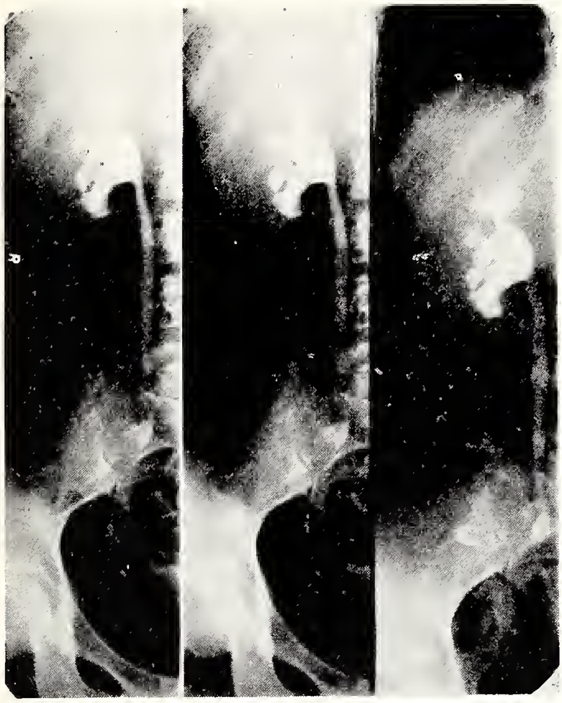
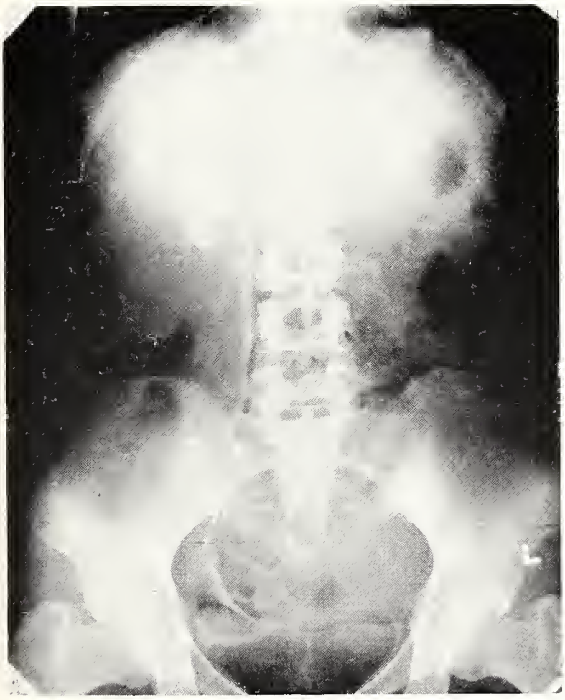
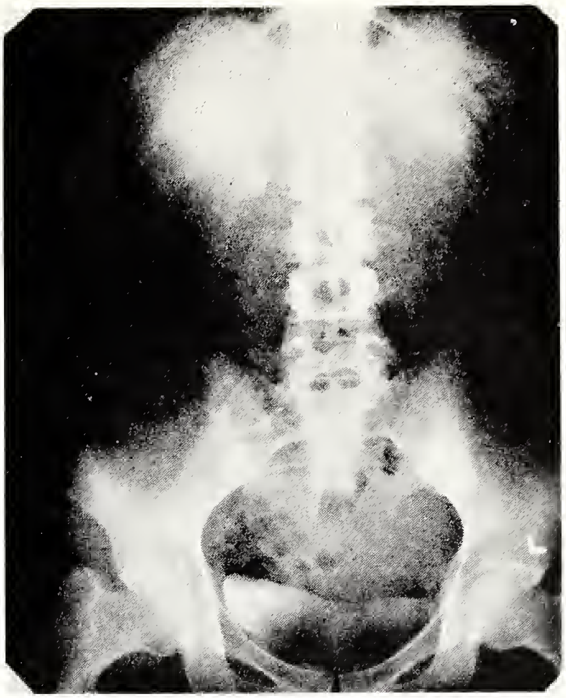


Fig. IV. Mrs. J. T., No. 81834 — 42-year-old white woman. Postoperative stricture at pelvic brim three months following pelvic surgery. Recurrent pyelonephritis present.

A. Serial right retrograde pyelogram with 10 minute delayed film on the last panel to the reader's right demonstrating very little drainage.



B. Retrograde pyelogram four and one-half months after Davis intubated ureterotomy.



C. 10 minute delayed film subsequent to B, showing very little media left in the kidney. Patient asymptomatic with a normal urinalysis four years later.

the same manner as just described because fibrosis has already begun. If a stricture is definitely present the use of the intubated ureterotomy as described by D. M. Davis should be considered. This technique has resulted in the complete relief of many ureteral strictures, an example of which is demonstrated in Fig. 4. Both intubated ureterotomy and uretero-ureterostomy should be associated with a period of splinting varying from four to six weeks.

SUMMARY

Although the conservative surgical philosophy is not new, the advancements in renal physiology, diagnostic and surgical techniques, and improved chemotherapy have enabled urologic surgeons to salvage kidneys which previously have been removed. The general considerations and criteria have being coagulated and the defect filled with fat. Oc- disease entities to which conservative surgery is particularly suited. It is our belief that with the armamentarium now available, there is no indication for uninhibited nephrectomy or ligation of the ureter for the purpose of producing a silent nonfunctioning kidney.

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(Bibliography on page 197)

Management of Prostate Disease In General Practice

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The prostate is an important accessory sex organ of glandular structure and is subject to diseases such as infection, calculus formation, benign hypertrophy and malignancy. The incidence of these diseases is associated with certain age groups. In young individuals up to the age of fifty, infection and calculus formation are more common while in the age group of fifty or past, there is a tendency of the gland to undergo tumor formation. Tumor formation in the fifth and sixth decade is more likely to be benign in type, while in the seventh and eighth decades, the incidence of malignancy rises sharply to a point where one half the tumors of a prostate in the eighth decade are malignant.

DIAGNOSTIC PROCEDURES

A review of simple tests that are often of use in diagnosis of prostatic conditions is given below.

Two-Glass Test

The patient with a full bladder voids first in one glass and then finishes voiding in a second glass. The first specimen washes out the exudate contained in the urethra which may originate either from a prostatic infection or from a urethral infection. The second or last represents the truer sample of bladder urine. The two-glass test helps in localizing the site of the infection. The urine obtained by this test can be then centrifuged and the urine sediment examined microscopically and by gram stain. The type of organism can be classified so that the proper selection of a drug can be made.

Residual Urine Test

This is done by having the patient void, with an effort to empty his bladder completely. The bladder is then emptied by means of a catheter of any retained urine, which is measured. The normal residuum should be less than an ounce.

Prostatic Smear

The prostatic secretion is obtained by massage and a representative drop is placed on a glass slide. A cover glass is placed on this drop and pressed down gently. The wet film of the prostatic secretion is then examined under the microscope with particular attention to the number of pus cells present. A count of more than eight pus cells per high-powered field is considered abnormal. Corpora amylacea and lecithin bodies must not be confused with pus cells.

NON-MALIGNANT PROSTATIC DISEASE PROSTATOVESICULOSTASIS

Prostatovesiculostasis and chronic non-specific prostatovesiculitis are similar. Chronic vesiculoprostasis is the most common of the prostatic diseases. It is estimated that thirty-five per cent of men age thirty years or older, have this disease. The etiology is obscure since examination of the secretion from the prostate and seminal vesicles by gram stain and culture fail to show bacterial growth and studies of autopsy specimens of prostate and seminal vesicles from patients with this disease show no evidence of inflammation or other histo-pathological changes. The clinical experience of many indicates that the cause in the unmarried male may be sexual excitement without physiological gratification and in the married male, marital sexual maladjustment.

Symptomatology

Pain is a frequent symptom and is manifested by a dull, continued sensation of pressure in the sacro-iliac region. It is sometimes noted as a tired feeling in the lower back. There may also be pain in the groin, suprapubic area, or in the testes. A sense of perineal fullness or discomfort may be present.

Sexual complaints may consist of premature ejaculation, impotence or loss of libido. An urethral discharge of the mucoid type may be present and is most frequently noticed in the early morning or after bowel movement or after long automobile rides. It originates as an overflow from the overdistended prostate and seminal vesicles. Such a discharge is frequently disturbing to the patient and is often the cause of the patient seeking medical help. Systemic symptoms such as weakness, fatigue, anxiety and tension headaches may cause these patients to be classified as psycho-neurotic.

Diagnosis

The diagnosis is based on history, symptoms and physical findings. The history and findings have already been mentioned. The rectal findings are not always characteristic, but usually consist of a moderate enlargement of the prostate which has a soggy, mushy consistency. The seminal vesicles may be palpable and distended. Prostatic secretion obtained by massage or stripping of the prostate or seminal vesicles may be copious and may contain no abnormal elements or may contain pus cells in varying concentration. The two-glass test may show a cloudy first glass and a clear second glass.

Treatment

1. Reassurance to the patient that he has no serious organic disease and that he can be helped tends to relieve the anxiety and restore peace of mind. To tell the patient with prostostasis frankly that there is nothing wrong with him deprives the patient of relief from his symptoms and increases his sexual frustration. It is wise to discuss with the patient the nature of his disease and its probable cause, assuring him that he has an annoying disease which will not endanger his life. Under sympathetic reassurance many patients reach an understanding that enables them to live with their problem.

2. Local treatment. Periodic gentle massage, or stripping of the prostate and seminal vesicles, aid in emptying these structures of their retained secretion. Initially it may be necessary to give a massage weekly until a patient is relieved of his symptoms. The periods between treatments are then increased to monthly intervals and then gradually to every two or three months. At this stage of the treatment, he may be dismissed and told to return if symptoms recur.

3. Sulfonamides and antibiotics are usually ineffective. In the older age group, ten milligrams of testosterone propionate following the prostatic massage seems to have a stimulating effect on the prostate and hastens improvement. A larger dose of this drug is not indicated unless there is evidence of testicular deficiency.

ACUTE PROSTATITIS

Formerly gonococcal infections were the chief cause of an acute prostatitis. Since the advent of antibiotics, the importance of this etiology has diminished. Pyogenic organisms, such as staphylococci, B. coli and pseudomonas aeruginoses organisms are the principal causes in order of their listing. The bacteria may reach the prostate from the urethra or by the hematogenous and lymphatic routes, or by introduction during instrumentation, such as the passage of catheters, sounds or cystoscope.

Symptoms

1. Local. In acute prostatitis, the posterior urethra and bladder are eventually involved in an inflammatory process so that dysuria and frequency are prominent symptoms. Lower sacral discomfort and perineal pain are frequent symptoms. A purulent urethral discharge may be present as a result of the inflammatory process draining into the posterior urethra. Difficult urination or acute urinary retention may be a result if the inflammation produces a large amount of swelling so that the prostate gland encroaches upon the lumen of the urethra.

2. Constitutional symptoms. A fever ranging as high as 104°, associated with prostration and sweating, may occur.

Diagnosis

1. Symptomatology as previously mentioned.

2. Physical findings on rectal examination are: a swollen, hot, tender prostate gland. The slightest pressure on the gland is exceedingly painful. If it is possible to express prostatic secretion by gentle pressure, an examination of the material will often reveal the presence of pus and the offending bacteria. Both specimens of a two glass urine test may be cloudy if there is an associated cystitis.

Treatment

Treatment consists of bed rest, the use of sedatives and analgesics for comfort of the patient and the use of chemotherapy or antibiotics. The proper choice of the latter may be aided by the examination of a stained smear of either the urine or of the urethral exudate. If a gram positive organism, such as staphylococci is present, the use of penicillin, erythromycin, oleandomycin or novobiocin is indicated. If gram negative bacilli are present, a sulfonamide, chloramphenicol, tetracycline, chlortetracycline or oxytetracycline preparation is indicated. The use of heat in the form of hot sitz baths or hot packs is often beneficial. Instrumentation should be avoided except to pass a Foley catheter in case urinary retention is present. When the acute stage has passed, gentle massage of the prostate every three to seven days will encourage drainage from the infected gland through the prostatic ducts and urethra.

CHRONIC PROSTATITIS

Chronic prostatitis may be a sequel to acute prostatic infections. The symptoms are variable and are similar to those mentioned in prostatostasis. The diagnosis depends upon the similar history as previously mentioned under prostatovesiculitis and with the findings on rectal examination of a soft, boggy, enlarged prostate. Long standing inflammatory changes may lead to fibrosis with a formation irregular areas of firmness and increased consistency over the gland. The fluid expressed from the prostate usually contains a large number of pus cells and large cells containing granular bodies. Bacteria may occasionally be found on examination of a stained smear of the prostatic condition. As a rule, the first glass specimen of a voided two-glass test will show pyuria or shreds. The treatment is similar to that previously mentioned under prostatostasis. The use of chemotherapy and antibiotics is likewise unsatisfactory with this condition.

PROSTATIC ABSCESS

The prostatic abscess is a sequel to a severe, acute or a long-continued chronic prostatitis. The etiological organisms are most often staphylococci, bacillus coli, streptococci, and pseudomonas aeruginosa, in the order of their listing. The symptomatology is very similar to that of an acute prostatitis but in most instances, the patient is more acutely ill and the general systemic symptoms may be more pronounced.

Diagnosis

On rectal examination the prostate is found to be swollen, extremely tender and fluctuant at some point. The expression of a thick, cherry-red secretion with gentle pressure over the fluctuant area of the prostate is diagnostic of a prostatic abscess.

Treatment

The use of heat, chemotherapy or antibiotics may cause a resolution of a small prostatic abscess. Spontaneous drainage by rupturing of the abscess into the posterior urethra may occur. Surgical drainage is advisable when there is evidence of fluctuation on rectal examination associated with a persistency of chills, fever and increasing leukocytosis. Rupture of the abscess into the rectum should be prevented by early surgical drainage. Surgical help must be obtained to drain the abscess, either by means of a perineal incision or transurethral incision of the abscess. The latter is done with an instrument similar to that used in removal of prostatic hypertrophy. The residual infection in the prostate should be treated by periodic prostatic massage after the acute phase has subsided.

TUMORS OF THE PROSTATE

The most common benign tumor of the prostate is prostatic hypertrophy. A discussion of the etiology and the pathology of this disease may be found in any textbook of urology. It begins to make its appearance at about the age of fifty years and it is estimated that two-thirds of the men sixty-five years or older will have some degree of prostatic hypertrophy. Not all of these patients will present significant symptoms or will require definitive surgical treatment. The presence of benign hypertrophy should be considered in all male patients within this age group who present themselves with any type bladder symptomatology. An acute urinary tract infection in this age group suggests the presence of a bladder neck obstruction. In general, these patients present two different types of symptoms. In both groups the symptoms are results of the obstruction at the bladder outlet by the overgrowth of the prostate gland, which interferes with evacuation of the bladder. When the obstruction at the neck of the bladder begins to manifest itself, the bladder responds by hypertrophy of its muscular elements and by increased irritability of its neurogenic structure. These two responses may go on simultaneously or one may be manifested more prominently than the other. It is frequently possible for these two reactions to keep pace with a degree of obstruction so that an individual can compensate and empty his bladder completely for a long period of time, even though a significant obstruction is present. The effort of the bladder to empty itself more often leads to frequency, nocturia and urgency. The inability to restrain the contraction of the bladder is the cause of the urgency and in many individuals this is the first symptom that the patient notices since its presence causes him to soil his clothes. The patient will state at this stage, that he has noticed no change in the caliber of his stream or any difficulty in initiating the act of micturation. The second group of symptoms consists of the gradual appearance of slowness and difficulty starting with the urinary stream which may progress to a point where the patient cannot empty the bladder completely and passes only a small quantity of urine at any given time, because the hypertrophy of the bladder musculature cannot keep pace with the degree of obstruction. This leads to frequency and nocturia. This type of symptomatology may reach its climax in acute retention indicating that the bladder musculature has reached a stage of complete decompensation. When marked decompensation of the bladder wall occurs, the pressure of the urine on the bladder may reach a point where it can leak out past the prostatic obstruction leading to constant dribbling and uncontrolled urgency, so that the patient voids in his clothes wherever he may be. It is obvious that the symptoms of obstruction are variable and that a marked degree of obstruction may be present before acute urinary retention occurs. It is important to be able to recognize the presence of this disease so that early treatment can be instituted. The mortality and the morbidity of surgical treatment of this condition is so low that the patient should no longer be denied the advantage of early treatment.

Diagnosis

The diagnosis is made on the history and physical findings. On general physical examination one can frequently palpate an overdistended bladder or can percuss an increased dullness in the suprapubic area, indicating the presence of residual urine. A rectal examination may be misleading, as the size of the prostate is no index to the degree of obstruction. The classical hypertrophy of the prostate exhibits on rectal examination, an enlargement of the gland with a smooth and rubbery consistency, whereas obstruction due to a median bar or to a median lobe, may show no evidence of enlargement on rectal examination. Neither of these two types of prostatic obstruction can be palpated on rectal examination and their presence can only be determined by cystoendoscopy and by pneumocystography. The determination of residual urine would determine the degree of decompensation of the bladder as a result of the obstruction. A retention of more than 30 cc. of urine with adequate symptomatology, is indicative of a significant degree of prostatic obstruction. The catheterization or the passage of any urethral instruments, such as sound or cystocope in the presence of an obstructing prostate is a hazardous procedure. It should only be done when provisions have been made for the proper definitive care of the patient. It is not uncommon that after the use of instruments, such as a simple catheter, the patient may develop an acute urinary retention or may have a severe urinary tract infection. The retained urine makes an ideal culture meeting for the growth of bacteria and the development of an infection. If the patient is catheterized and a large residual urine is present, it is wise to leave an indwelling balloon catheter in place and to make preparation for the patient to have his prostate removed surgically. Whenever possible, it is best to avoid any catherization or instrumentation unless the proper provisions have been made for the proper definitive care of the patient. The quantity of retained urine can be estimated by intravenous pyelography, provided the renal function is adequate, by obtaining a postvoiding film. The estimation of residual urine in this matter does not run the risk of any urinary tract infection. In case catheterization has been done, adequate chemotherapy and antibiotics should be prescribed as prophylaxis against infection. In case a urinary tract infection or acute urinary retention develops, a balloon catheter should be installed following catherization.

Treatment

The general practitioner's role is to evaluate the symptoms, physical findings and residual urine and decide if the patient needs further diagnostic studies or definite treatment. Medical treatment is only of temporary benefit. The only effective treatment for benign hypertrophy of the prostate is surgical removal of the obstructing tissue. The use of prostatic massage and testicular hormones only afford a temporary relief and it is better to remove the obstructing tissue early than to defer treatment until the patient has acquired a severe urinary tract infection or sufficient obstruction to produce obstructive changes in the urinary tract. There are four surgical procedures for removal of the prostatic hypertrophy, which consist of a transurethral resection, suprapubic prostatectomy, retropubic prostatectomy and perineal prostatectomy. A properly trained urologist should be able to evaluate the prostatic problem and decide which of the four procedures are most suitable for each individual patient. As a rule, 90 per cent of the obstructing prostates can be completely removed by means of a transurethral resection. This method offers the lowest mortality, morbidity and shortest hospital stay. The other three means are open surgical procedures and are only indicated where the large glands weigh seventy-five grams or over. Patients with small obstructive glands should not be subjected to open surgery.

MALIGNANT TUMORS OF THE PROSTATE

The most common malignant tumor of the prostate is an adenocarcinoma and this incidence is highest in the seventh and eighth decade. It is an insidious disease and its presence is usually not manifested until the disease is far advanced. Fortunately, it progresses slowly and its growth can be controlled for a considerable period of time by the use of hormones. It is a curable disease, provided the diagnosis is made early so that complete surgical removal of the prostate is possible Unfortunately, less than 5 per cent are diagnosed early enough for the curative type of surgery.

Symptoms

In the early stage of the disease, no symptoms may be apparent. Occasionally the patient may have a vague, uncomfortable feeling in the region of the bladder, or a mild feeling of urgency or urinary frequency. Later after the disease has progressed, bladder neck obstruction occurs and the symptoms are similar to that of benign prostatic hypertrophy. In the advanced stages of the disease, the symptoms may arise from metastatic involvement of the skeletal system which causes arthritic type bone pains and anemia.

Diagnosis

The diagnostic physical findings are noted on rectal examination. Rectal examination early in the disease may show only a solitary nodule or an area which is firm or woody hard. In late disease, the prostate is firmer than normal or hard in consistency. The contour or borders of the gland are not distinct and the general consistency is nodular or irregular with indistinct border. Residual urine may or may not be present, depending upon the stage of the disease.

Curative treatment is accomplished by radical prostatectomy, which consists of total removal of the entire prostate gland and seminal vesicles. This treatment is reserved for patients below the age of seventy years with early disease and no demonstrable extension of the disease. Only 5 per cent of the prostatic carcinoma are diagnosed early enough for this treatment. Early diagnosis is accomplished by routine rectal examination. Such prostates are usually found to have only a solitary nodule in the gland. Only by diligent rectal examination of all males over forty years of age can an early diagnosis of this disease be made and the advantages of cure be made available to a greater number of men. The presence of such a nodule in the prostate indicates the need of further study and prostatic biopsy for confirmation of diagnosis.

Palliative Treatment

At the present time, 95 per cent of the victims of this disease receive this type of treatment. This consists of hormone control of the disease and a correction of the bladder neck obstruction by transurethral resection. Open surgery is never done when the diagnosis of the disease can be made beforehand. The hormone treatment consists either of the administration of an estrogenic substance or castration of the individual by removing the source of the testicular hormone, or a combination of both. The use of the hormone treatment will usually cause a remission of the disease for a period of three or more years. Records are available, showing the disease can be controlled for as long as fifteen years. Combined treatment of the use of hormones and castration gives results which are slightly better than the use of either alone. Estrogenic hormones are used. Synthetic hormones are more widely used since they are less expensive. The most widely used are diethystilbestrol and tace. The latter has less undesirable side effects and is widely used for this reason. The treatment should be continued for the entire life of the patient as the malignancy will resume actively if the hormone is withdrawn.

POSTOPERATIVE FOLLOW-UP CARE

The postoperative care following prostatic surgery for both benign and malignant disease is similar. The following most common postoperative conditions are discussed.

Secondary Hemorrhage

The most serious complication following any prostatic operation is secondary hemorrhage, which may occur after the patient has returned home from the hospital. The most common time at which this may occur is from the tenth to the twelfth postoperative day. It rarely occurs after the third week of postoperative convalescence. Secondary bleeding is a result of sloughing of the eschars over the granulating surface of the healing prostatic cavity. The prostatic cavity, after any type of prostatic surgery, is an open granulating wound which gradually epithelizes by growth of the epithelium from the bladder, urethra and periurethral glands. Complete epithelization requires from two to three months. Secondary bleeding may be associated with activity or effort and for this reason, the patients are advised to remain quietly at home until after the third week. Should tinting of the urine with blood occur, bed rest is advised, but if gross bleeding or clot formation occurs, the patient should be hospitalized. In such instances, a No. 24 or No. 26 French, 30 to 75 cc. balloon catheter is installed and the bladder evacuated of blood clots. The blood clots can only be satisfactorily removed with a piston type syringe. If the blood clots are rather large, it is frequently necessary to evacuate the clots under anesthesia by means of a rigid tube, such as a resectoscope or cystoscope sheath and an Ellik evacuator or piston syringe. Following the evacuation of the blood clots from the bladder the bleeding point can often be visualized by cystoscopy and stopped by electro-fulguration. In most instances, simple evacuation and instillation of a balloon catheter will satisfactorily control the bleeding. It is usually advisable, unless suitable equipment is available, to return the patient to the urological surgeon when bleeding of this magnitude occurs.

2. Meatal Strictures

Urethral meatal stricture is a frequent complication following prostatic surgery and is treated by simple dilation. Occasionally, a meatotomy is required if the stricture does not respond satisfactorily to simple dilation. Postoperative posterior urethral strictures occasionally occur. Unless obstructive symptoms are present, it is advisable not to use sounds until after the sixth postoperative week has passed, for fear of stirring up secondary hemorrhage.

3. Pyuria

Pyuria is present after all types of prostatic surgery and will persist for at least three months or until the epithelization of the prostatic fossa has occurred. It is impossible to eradicate the pyuria by chemotherapy or use of antibiotics until the epithelization has been accomplished. During this time, the prostatic fossa is a granulating wound with constant exudation into the bladder which produces a pyuria. The use of drugs is indicated only on a symptomatic basis during the postoperative period. The use of chemotherapy or antibiotics is indicated only after the third month period has elapsed and proper treatment at this time will usually eradicate the pyuria. Malignant prostatic disease may epithelize slowly or not at all so that pyuria may persist for prolonged periods in spite of proper treatment. In such cases, if the patient is asymptomatic, the presence of pyuria should not be too much concern.

4. Epididymitis

Epididymitis is due to extension of infection via the vas deferens to the epididymides as a result of wearing an indwelling catheter or from incompetence of the internal vesical sphincter following prostatic surgery. It can be prevented by early vasectomy with ligation at the time an indwelling catheter is installed. It is not always possible to do a vas ligation at the time of original catheterization and as a result, it is usually done at the time the prostatic surgery is performed. Acute epididymitis causes marked disability due to high fever, prostration and severe pain. It is usually a self-limiting infection and responds to treatment with bed rest, antibiotics, as sulfonamides, elevation of scrotum and the use of heat. Incision and drainage and orchidoepididmyectomy are rarely required. The patient may be ambulatory when he is afebrile and free of pain. The swelling and induration may persist for many weeks and should not cause too much concern.

HAMSHER — (concluded from page 191)

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Discovered: That the cold bad winter is due to the admission of Alaska to statehood. We may have to manage for Cuba to balance our climate.

NEW MISSISSIPPI PHYSICIANS

Eighteen physicians were granted medical licenses by reciprocity at the December meeting of the Mississippi State Board of Health, according to Dr. A. L. Gray, Executive Officer.

In this group of physicians, licensed by other states and recently coming into Mississippi, 15 have located in towns with a population over 10,000 and 3 are additions to the University Medical Center.

Listed are the physicians receiving reciprocal licenses and the town where each is located: James Edward Alexander, Biloxi; John Gilbert Alexander, Union; Carl Lumpkin Beard, Jr., Greenville; Marion Andrew Carnes,Jackson; Edwin Frank Chobot, Jr., ackson; Oscar Meir Conner, III, Jackson; Lyndon Myers Conley, Houston; Hubert T. Goodman, Jr., Jackson; Orren Williams Hyman, Jr., Jackson; Charles William Kelley, Clarksdale; Herman E. Kellum, Jr. Vicksburg; William Rutledge Lockwood, McComb; Lois Margot Mosey, Jackson; Richard Wick Naef, Jackson; Sidney William Pittman, Osyka; John Robert Shell, Vicksburg; Herbert Sheppard Street, Laurel; Robert Elmer Wheaton, Meridian.

Hemoptysis: Causes and Management

JAMES D. HARDY, M.D., F.A.C.S.[†]
Diplomate, Board of Thoracic Surgery
Jackson, Miss.

THE PROBLEM

The patient who coughs up blood can present a difficult problem in both diagnosis and management. Several of our recent cases have prompted a renewed awareness of the need for aggressive management of pulmonary hemorrhage.

Hemoptysis varies enormously in degree, not only in different patients but even in the same patient from time to time. In one instance it may consist of nothing more than blood-streaked sputum; in another the bleeding may be so massive as to exsanguinate the individual. And even if massive hemoptysis is not of such a volume as to produce oligemic shock, the lungs may become so filled with blood that serious hypoxia or even drowning may occur. Furthermore, whereas one hemorrhage may have been mild, a subsequent one in the same subject may prove fatal. Thus any significant amount of pulmonary hemorrhage deserves prompt investigation and treatment.

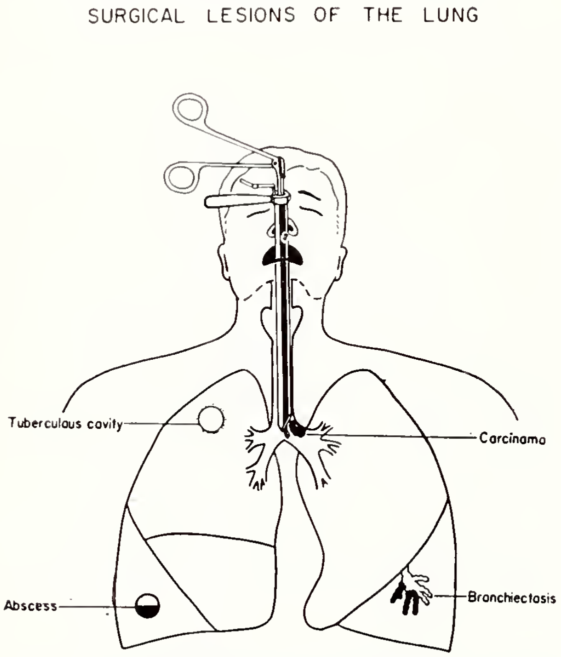

Fig. 1. Hemoptysis of minor degree occurs in many patients in whom no significant pathology can be demonstrated. (From Hardy, J. D., *Total Surgical Management.* Grune and Stratton, Inc., N. Y. C., 1959.)

CAUSES OF HEMOPTYSIS

A great many conditions may result in hemoptysis, but certain of these are far more common than others (Fig. 1). Some of the more important diseases may be listed:

A. INFECTION
  1. Tuberculosis
  2. Bronchiectasis due to suppurative disease
  3. Lung abscess
  4. Chronic bronchitis (perhaps aggravated by or due to smoking)
  5. Pneumonitis

B. TUMORS
  1. Carcinoma
  2. Bronchial adenoma

C. VASCULAR CONDITIONS
  1. Pulmonary arterial hypertension
    a. Mitral stenosis
    b. Other causes of pulmonary hypertension
  2. Pulmonary embolism
  3. Pulmonary arteriovenous fistula
  4. Congenital telangiectasis (which may also be associated with small arteriovenous fistulae)

D. MISCELLANEOUS OTHER CONDITIONS
  1. Broncholiths
  2. Trauma, including foreign body in bronchus (Fig. 4)
  3. Bronchopleural fistula (varied etiology, including amebic penetration of diaphragm)
  4. Penetration of tracheobronchial tree by external lesions such as esophageal carcinoma or aortic aneurysm

Of these, tuberculosis, bronchiectasis, bronchogenic carcinoma, and mitral stenosis have always been the big four. To these might be added chronic bronchitis.

DIAGNOSIS OF HEMOPTYSIS

History. The cause of the bleeding (which the patient himself can often lateralize) is frequently suggested by the symptoms the patient has had. For example, the history of a recent febrile illness indicates an infectious origin. Thus tuberculosis (Fig. 2), pneumonitis, lung abscess or bronchiectasis should be considered. Hemoptysis in a male beyond the age of forty, especially if he has smoked heavily for more than 20 years, requires the exclusion of carcinoma (Fig. 3). The history of rheumatic fever will prompt auscultation for the murmur of mitral stenosis.

[†] From the Department of Surgery and the University Hospital, University of Mississippi Medical Center, Jackson, Miss.

[*] Based on an address presented before Calcasieu Parish Medical Society Postgraduate Assembly, Lake Charles, Louisiana, September, 1958.

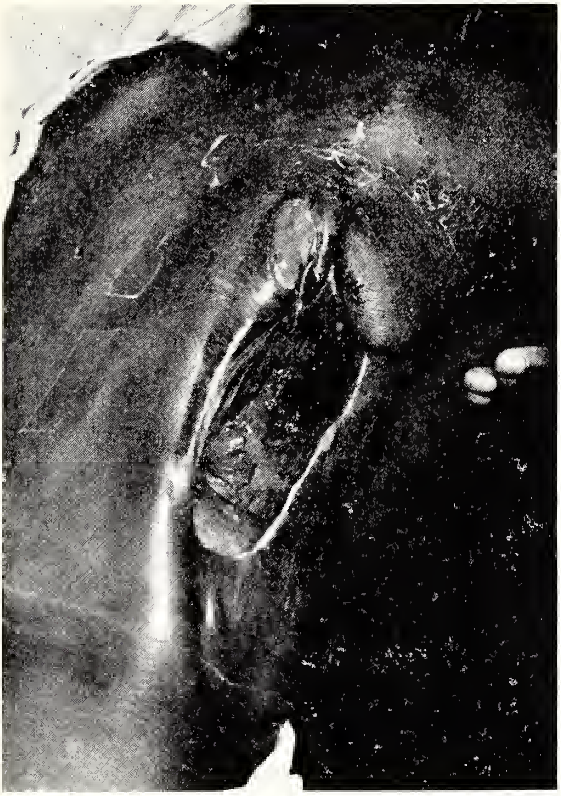

Fig. 2. Large defect in chest wall that had persisted following empyema secondary to right pneumonectomy performed 16 years previously. Cultures revealed the original tuberculosis infection still active to account for the persistent broncho-pleural-cutaneous fistula.

Physical Examination. The physical examination commonly affords further information of value. *Inspection* may reveal cyanosis (due to pulmonary A-V fistula?); or an appearance of chronic illness may suggest tuberculosis, lung abscess or far advanced malignancy. Patients with bronchiectasis frequently appear remarkably well, especially if the disease is of the "dry" type with relatively little sputum. Clubbing of the fingers and toes may be due to a number of diseases, including chronic infections, lung tumors, and cardiopulmonary vascular lesions.

Palpation, percussion, and *auscultation* may also be most helpful. A thrill and murmur may suggest mitral stenosis or pulmonary arteriovenous fistula. Bronchial breathing and a change in tactile fremitus may disclose pneumonia. Or rales may assist in lateralizing the site of hemorrhage.

Even so, it is not often that the cause of hemoptysis is established by the clinical examination alone. and further studies are required. These are:

1. Sputum examination (acid-fast, fungi, and malignant cells)

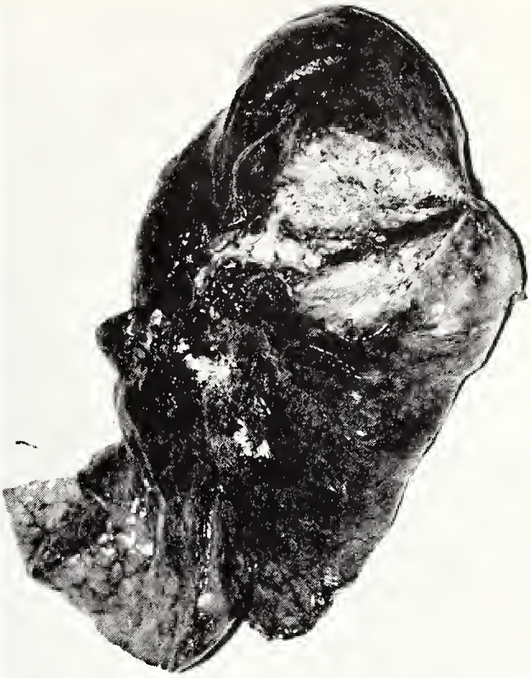

Fig. 3. Large carcinoma of the upper lobe.

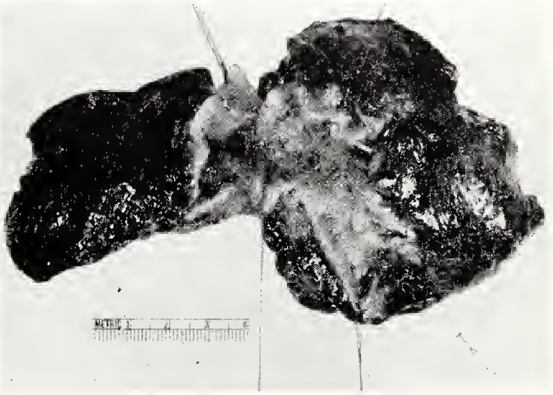

Fig. 4. Foreign body (tack) causing distal atelectasis, suppuration, pneumonitis and abscess formation.

2. Routine chest x-ray (PA and lateral)
3. Planograms (tomograms, laminograms, body section films) where indicated
4. Bronchoscopy
5. Bronchograms
6. Angiocardiograms (where indicated for heart lesion or possible pulmonary A-V fistula)
7. Skin tests, especially for tuberculosis
8. Scalene node biopsy
9. Cardiac catheterization (in selected cases)

Sputum studies may reveal acid-fast bacilli, fungi, or tumor cells but such a finding does not exclude the possibility of tumor or mitral stenosis. Bronchial secretions obtained at bron-

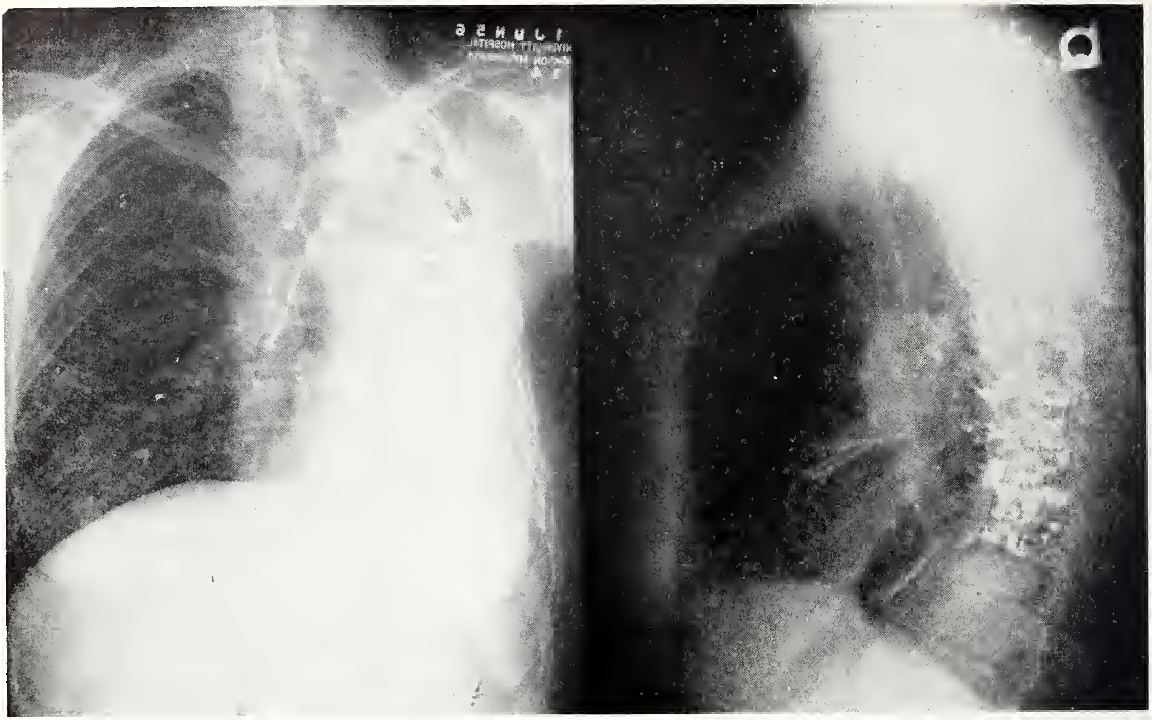

Fig. 5. Bronchiectasis involving entire left lung. Pneumonectomy was performed.

choscopy should be systematically examined. Repeated examinations are often required before positive findings are obtained.

Routine chest films disclose a parenchymal lesion in many instances. A solid tumor, atelectasis, an infiltrate, an abscess with an air-fluid level, a cavity, or frank consolidation of a lobe may be seen. Calcification may suggest a broncholith. Or, the film may be essentially non-revealing—as in most cases of bronchiectasis, some tumors and, indeed, in the early stages of many lesions. In mitral stenosis a barium swallow may show backward displacement of the thoracic esophagus by an enlarged left atrium, an important confirmatory finding in this condition.

Planograms often reveal central cavitation in a lesion which appeared solid on the routine film.

Bronchoscopy can be extremely useful in the diagnosis of hemoptysis. To begin with, one may discover which lung and even which lobe or segment the bleeding is coming from, a fact of vital importance if subsequent massive hemorrhage should necessitate emergency pulmonary resection (see below). Furthermore, a tumor of the bronchus may be visualized and confirmed by biopsy, or a foreign body may be discovered (Fig. 4). Finally, bronchoscopic aspiration of secretions often provides material that is superior to sputum for diagnostic purposes. Purulent secretions may be seen emerging from a particular lobar or segmental orifice, rendering later pulmonary resection of diseased tissue more precise.

Bronchograms (Fig. 5) may reveal bronchiectasis that could not be diagnosed with plain films. Certain lobes or segments may fail to fill. Lung abscess or bronchopleural fistula may be confirmed. Therefore, the use of bronchograms is strongly indicated in the investigation of otherwise undiagnosed hemoptysis.

Skin tests for tuberculosis, whether positive or negative, have useful connotations. The tests for fungus disease are much less helpful, in my experience.

Supraclavicular lymph node (scalene node) biopsy may confirm suspected tumor, tuberculosis, or sarcoidosis. A portion of the node should be cultured for acid-fast and fungous microorganisms.

Angiocardiography may confirm a suspected pulmonary arteriovenous fistula. Mitral stenosis is best diagnosed on the basis of the history, physical examination (typical murmur), and routine chest films, and angiocardiography is neither necessary nor desirable in this condition; cardiac catheterization will often confirm the presence of an elevated left atrial pressure in this disease ("wedge" pressure increased).

MANAGEMENT OF HEMOPTYSIS

The Acute Episode

When hemoptysis is only sufficient to be noticeable, the only management required is prompt diagnosis and appropriate treatment of the cause. However, not infrequently the physician is confronted with a patient who presents hemoptysis of an alarming magnitude. In fact, shock may shortly ensue, requiring blood transfusion, and there may be danger of drowning. What measures are useful under these circumstances?

Conservative Measures:

1. Lower the head and thorax to an angle of greater than 30°, so as to prevent the patient's drowning in his own blood.
2. Rapid and frequent tracheal aspiration if a bronchoscope can be inserted; otherwise a tracheostomy should be quickly performed.
3. Sedation.
4. Premarin or pitocin may be helpful.
5. Transfuse as necessary to maintain the blood volume.
6. Treat pulmonary edema with positive pressure oxygen breathing, repeated endotracheal suction and rotating venous tourniquets, aminophylline, and digitalization where indicated.

Pulmonary hemorrhage will usually cease spontaneously eventually, if proper supportive management permits survival of the patient during the acute episode.

When the patient has survived one massive hemorrhage, immediate steps should be taken to ensure definitive diagnosis and treatment. If the bleeding does not stop and the clinical situation is getting out of control, surgical intervention may be indicated.

Surgical Measures:

1. Bronchoscopy and tracheostomy have been mentioned.
2. Emergency thoracotomy and lobectomy for pulmonary parenchymal lesions.

CASE STUDIES

Three cases have been selected to emphasize certain diagnostic and therapeutic problems. Particularly, it will be noted that the operation performed is governed by the pathologic lesion which is present.

Case Study 1: Middle Lobe Syndrome with Chronic Bronchiectasis and Associated Pneumonitis. Lobectomy. Patient B. S., a 62-year-old white female, was referred with the chief complaint of coughing up blood. She had in fact suffered two fairly severe bouts of hemoptysis, the first about 5 months previously and the second 1 week prior to admission to the University Hospital on 9-7-1955. On the second occasion it was estimated that she had raised almost 2 teacups of blood.

Physical examination disclosed coarse rales over the general distribution of the right middle lobe and chest *roentgenograms* showed infiltration which probably involved the right middle lobe. At *bronchoscopy* bloody secretion was seen emerging from the middle lobe orifice, and *bronchograms* demonstrated bronchiectasis involving this lobe.

A *right thoracotomy* was performed on 9-12-1955, and the middle lobe was noted to be scarred and shrunken. Discoloration due to old blood within its parenchyma as seen through the visceral pleura further established this lobe as the origin of the pre-admission hemoptysis. Right middle lobectomy was performed and, upon opening the specimen along the bronchus, old blood was seen. The pathologist reported extensive pulmonary hemorrhage, recent, associated with pulmonary fibrosis and bronchiectasis.

The patient recovered uneventfully and has remained well.

Comment. Bronchiectasis is now recognized as a common cause of hemoptysis.

Case Study 2: Lung Abscess Due to Actinomycosis. Emergency Lobectomy for Massive Pulmonary Hemorrhage. Patient S. B., a 57-year-old Negro female, was admitted to the University Hospital on 8-10-57. Although she had not felt really well for almost 6 months, the symptom that had caused her to see her local physician (Dr. W. E. Sheffield of Charleston) was that of a substantial hemoptysis in July, 1957. A chest roentgenogram disclosed a lesion in the right upper lung field and she was referred to the University Medical Center. Prior to admission here, though, she had several additional episodes of coughing up bright red blood. She had lost about 20 pounds in weight.

On admission she was found to be still fairly well nourished. The chest film was repeated and again revealed a "solid" lesion which appeared to involve most of the right upper lobe. However, the day after admission, prior to bronchoscopy and sputum studies planned for the following day, the patient suddenly began coughing up massive quantities of blood. Specifically, within 15 minutes approximately 500 cc. of blood was expectorated. She was sedated, transfused, and placed in steep Trendelenburg in the right lateral decubitus position to avoid the flow of blood into the left or "good" lung, and to spare the right middle and lower lobes in so far as possible. As the day passed the hematocrit level declined despite transfusion, though the patient was never in frank shock. The hemoptysis varied in degree from hour to hour, but it never really ceased. Therefore, since the rales, the chest film, and the patient's sensation all identified the lesion of the right upper lobe as the probable source of the hemorrhage, we decided upon emergency lobectomy.

At 1:00 a.m. on 8-12-1957, using a double lumened endotracheal tube which prevented a flow of blood from the right main bronchus into the left, a right thoracotomy was rapidly performed. The right upper lobe was found to be consolidated except at the most apical portion. First, the bronchus was exposed and clamped, to prevent further passage of blood from the diseased upper lobe into the tracheobronchial tree. Thereafter a right upper lobectomy was completed in the usual fashion.

The excised lobe was opened postoperatively and in its center was a large lung abscess. Subsequent studies revealed the lesion as probably due to actinomycosis.

The patient recovered uneventfully from the operation and was discharged on further medical therapy.

Comment. This was an instance of a "solid" lung abscess, due to a fungus, which gave rise to massive pulmonary hemorrhage, and which was managed successfully by lobectomy. The pulmonary lesion was considered to most likely represent a tumor, prior to surgery, and of course lung cancer is a common cause of hemoptysis.

Case Study 3: Mitral Stenosis with Easy Fatigability and "Effortless" Pulmonary Hemorrhage But Without Marked Dyspnea. Patient T. M., a 19-year-old gasoline truck driver, was referred to the University Medical Center (by Dr. John E. Windham of Ruleville) with the diagnosis of mitral stenosis with or without associated pulmonary disease. He had had rheumatic fever in 1940, but had had no sequelae, other than a heart murmur, until May, 1956, when he experienced an episode of hemoptysis that was associated with only moderate dyspnea. Nevertheless, he tired very easily and his work was beginning to suffer on this account.

Physical examination and *roentgenographic* studies further confirmed the diagnosis of mitral stenosis as the most likely cause of the several episodes of pulmonary hemorrhage which he had sustained.

At operation on 12-7-1956 the heart was exposed through a left posterolateral thoracotomy incision. Entering through the left atrial appendage, one found the mitral valve markedly stenosed and moderately calcified. A satisfactory commissurotomy was achieved.

Postoperatively the patient recovered uneventfully, had no more hemoptysis, and found his exercise tolerance improved to the point that he could again do his work without restriction.

Comment. Pulmonary hemorrhage and easy fatigability may exceed dyspnea in prominence in some patients with mitral stenosis.

DISCUSSION

It is evident that one cannot effectively manage pulmonary hemorrhage definitively unless a diagnosis can be established. For example, it might be disastrous mistakenly to perform an emergency pulmonary resection for bleeding due to mitral stenosis. Accordingly, the patient who manifests hemoptysis must be studied in an orderly, detailed, and systematic manner, else the diagnosis may be missed in an unnecessarily large number of patients.

SUMMARY

1. Hemoptysis can be caused by many conditions.

2. By means of an orderly series of diagnostic steps the cause can usually be identified.

3. Most acute or initial episodes of pulmonary hemorrhage cease short of exsanguination or drowning.

4. Once the cause has been identified, the appropriate logical therapy should be instituted promptly to forestall further and possibly fatal subsequent hemorrhages.

5. Emergency pulmonary resection can be lifesaving in selected instances.

Medical Center Miscellany

A Symposium on Psychosomatic Obstetrics and Gynecology will be held at the University Medical Center in Jackson, March 4.

Planned for both the specialist and the family physician, the one-day program is sponsored by the psychiatry and the obstetrics-gynecology departments.

Three great lecturers will headline the faculty. They are Dr. James H. Ferguson, professor of obstetrics and gynecology and chairman of the department at University of Miami School of Medicine; Dr. P. J. Sparer, professor of psychiatry and preventive medicine at University of Tennessee School of Medicine, and Dr. Harry Fields, associate professor of obstetrics and gynecology, University of Pennsylvania School of Medicine.

Dr. Ferguson is past-chairman of the Committee for Advancement of Psychosomatic Obstetrics and Gynecology of the American College of Obstetrics and Gynecology.

He will speak on "Growing Interest in Psychosomatic Obstetrics and Gynecology," at 10:00 a.m. Dr. Sparer will wind up the morning session with a 12:00 noon talk on "Psychogenic Pelvic Pain," and Dr. Fields will open the afternoon program. His topic is to be "Patients' Reactions to Elective Induction of Labor."

Five University of Mississippi faculty members are also to participate in the program. Dr. F. J. Moore, professor of psychiatry and chairman of the department, is to preside during the morning and to speak at 9:45 a.m. on "Developing Good Rapport with Female Patients."

After an open discussion period, Dr. Blanche Lockard, clinical instructor in ob-gyn, will discuss "A Program for Premarital Consultations," at 11:15 a.m.

The three guest lecturers and Dr. C. G. Sutherland, clinical assistant professor of ob-gyn, will present a panel discussion of psychosomatic problems seen in office practice at 2:45 p.m. They'll be followed by Dr. Walter H. Simmons, also a clinical assistant professor, speaking on "Time-Saving Methods of Giving Antepartal Instruction and Support During Labor."

The symposium will conclude with a film, "Support During Labor," with comments by Dr. Michael Newton, professor of obstetrics and gynecology and chairman of the department. Dr. Newton will preside for the afternoon session.

Detailed programs and invitations to register in advance for the March 4 meeting have been sent to all state physicians. A $5.00 registration fee is charged. The Mississippi Academy of General Practice will award six hours of Category 1 credit for attendance at this course.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. .... Cardiology
Harvey F. Garrison, Jr., M.D. .... Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center .... Surgery

CARDIOLOGY

THE COURSE OF PRIMARY HYPERTENSION IN THE YOUNG

George A. Pereramdfacp, New York, New York
Taken from *Annals of Internal Medicine*, Volume 49, No. 6, Page 1348

There seems to be some belief among physicians that primary essential hypertension, beginning in youth or early adult life, has a more accelerated and less benign course than that contracted at a later age. The present study was undertaken to contrast the course of those who develop disorders when they are young with a natural history of the disease in all age groups. All cases were selected from the Presbyterian Hospital records and thirty (30) patients were found established diastolic hypertension was known to have appeared at less than twenty-five (25) years of age and in whom it was possible to follow a subsequent course. The study indicated that the average young hypertensive lived for a mean period at least twenty (20) years after diagnosis and this may be compared to the twenty (20) years of means survival, observed in this clinic in one hundred and fifty (150) patients with primary hypertension followed from onset until death, but the average age at onset is thirty-two (32) years. The data on this series, point to the fact that the initial level of a casually taken blood pressure cannot be correlated with the rate of progression or the subsequent development of complication and that the course of this disorder in younger patients is not necessarily more rapid than that in older patients.

Comment: Most physicians in the South have an opinion quite at variance with the above study, in that hypertension in young colored subjects certainly seems to follow the more accelerated and rapidly progressive course than that occurring in the middle-age white patient. This, of course, could be a purely racial difference in reaction to disease without any variable of age onset being considered.

PEDIATRICS

Journal of Radiology. Use of Air as a Contrast in the Diagnosis of Intestinal Obstruction of the Newborn. John W. Hope and Edward O'Hara—p. 349.

The authors recommend the use of air instead of opaque media in making examinations of the intestinal tract in the newborn. Air is not only better because most obstructions have a high location but the child will receive less radiation during the examination.

Eight cases are used to illustrate how an obstruction can often be located by use of air contrast. When the stomach is found filled with fluid, the fluid is withdrawn and replaced with a similar quantity of air. Then the patient is tipped into different positions and the entire outline of the gas-filled chambers can be observed on roentgenograms. The relatively small quantity of irradiation caused by taking films compared with a much larger amount of radiation delivered by fluoroscopy only is an important point. Often fluoroscopy may not be necessary. The use of opaque contrast media in newborn infants seldom achieves a diagnosis.

In this connection, several of the recommendations published in the National Academy of Sciences National Research Council report are of interest. "(1.) The medical use of x-ray should be reduced as much as is consistent with medical necessity. (2.) The average exposure of the population of reproductive cells to radiation above the natural background should be limited to 10 roentgens from conception to age 30."

It is the purpose of this paper to demonstrate how radiation can be kept to a minimum in arriving at a diagnosis of intestinal obstruction in the newborn infant and to condemn unnecessary radiological procedures which not only delay but often obscure the diagnosis.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

ACADEMY LUNCHEON

The Mississippi Academy will again have a luncheon at the Mississippi State Medical Association meeting in May at Biloxi. Members, wives and other guests will be invited. Plan now to attend the meeting in Biloxi this year and when the date and place of the luncheon are announced, make your reservations with Dr. E. L. Bolton of Biloxi.

MOORHEAD NOMINATED

Dr. R. J. Moorhead of Yazoo City, president-elect of MAGP, has been chosen to be president-elect of the Association of American Physicians and Surgeons. Dr. Moorhead was previously chairman of the Association's Essay Contest Committee. He was featured in "Personalities" in the January issue of the *Journal GP*.

NEW MEMBERS

New Active Members: Dr. Van Robinson Burnham, Jr., Clarksdale; Dr. Edsel Ford Stewart, Gloster; Dr. Otis Carl Mitchell, Liberty; Dr. Steve C. Leist, Clarksdale; Dr. Harry Greenwell Fridge, Hattiesburg.

Associate Members: Dr. Richard L. Berry, Taylorsville; Dr. Sidney Wm. Pittman, Osyka (transfer from Tennessee.)

Welcome to the ranks, gentlemen! Your first opportunities for attending postgraduate courses approved for Category I credit are 1) The Psychosomatic Aspects of Obstetrics and Gynecology, at the University Medical Center on March 4, 1959, 2) The Cardiovascular Seminar, also at the University Medical Center on April 1, 2, and 3, 1959.

GETTING ACQUAINTED

District III is composed of members in Walthall, Pike, Amite, Wilkinson, Adams, Franklin, Jefferson and Lincoln counties. Dr. Frank C. Massengill of Brookhaven is district director.

The following are members in District III: Jim C. Barnett, Brookhaven; A. V. Beacham, Magnolia; Wm. O. Biggs, Osyka; James M. Brock, McComb; Walter W. Crawford, Tylertown; Harry C. Frye, Magnolia; Warren A. Hiatt, Magnolia; Julian T. Janes, Jr., McComb; Frank C. Massengill, Brookhaven; Wm. T. Mayer, McComb; Thomas L. Moore, Jr., McComb; Thomas Purser, Jr., McComb; Allen M. Read, Natchez; Eric P. Robbins, Brookhaven; Edsel Ford Stewart, Gloster; Marcus E. Waring, Tylertown; J. O. Wood, McComb. Associate members: Joe J. Bethany, Magnolia; Homer G. Ellis, Centreville; Thomas P. Wood, McComb; Sidney W. Pittman, Osyka.

Members in Districts I and III were previously listed.

HOSPITALITY, INCORPORATED

Hospitality has come to mean Mississippi more than magnolias. Hospitality is our business, a major source of our income.

Now it comes to our attention that we have Hospitality Industries, Inc., authorized by charter to engage in a variety of related businesses (pharmaceutical, hospital and surgical supply, janitor supply, etc.) of which Abars Pharmaceuticals, the drug division, is the first ethical pharmaceutical house in Mississippi. This industry was not attracted from beyond our borders. It is a home industry.

Hospitality Industries, Inc., drew from the medical and drug professions many of its officers and directors. These in large measure determine the standards to which Abars adheres in its operation. States the general manager, "Dun and Bradstreet reports were obtained to ascertain financial conditions and personnel histories of qualified pharmaceutical suppliers. Any company who had, at any time, been cited by the Food and Drug Administration for infraction of a regulation of any kind was not considered. Only those companies maintaining a research department staffed by qualified personnel were considered. Thus Abars is provided with the services of manufacturing chemical companies of the highest caliber. Some specialize in capsules and tablets; others in liquids and ointments . Our injectibles are manufactured by a specialist in this field. *All* are recognized within the drug industry as leaders.

"While we have the utmost confidence in our suppliers, a further safeguard is employed. Periodically we submit products of all categories to Scientific Associates, Inc., New York City, for analysis. From this foremost of all analytical services, we are provided with reports on therapeutic potency, quality of coatings, appearance, etc., on shelf-size samples selected at random from our inventory. In the final analysis, we are confident that the pharmaceuticals offered by Abars Pharmaceuticals are as good as any on the market."

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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A QUESTION OF MONEY

Money may not be the root of all evil, but it appears to be involved in many of the problems facing American medicine. An editorial in the January issue of *GP* said "The foremost economic problem in medicine today is rising cost of health care."

Health Information Foundation has released figures for 1957 on the cost of medical care. The American people spent 15 million dollars in that year for medical care, compared to not quite 3 million dollars in 1929. Population growth and rising prices account for some of the difference, but this increase also represents a truly remarkable change. This is shown by the fact that the part of all personal consumption expenditures used for medical care increased from 3.7 per cent in 1929 and 4.3 per cent in 1948 to 5.3 per cent in 1957.

All personal consumption expenditures went up 260 per cent from the 1929 level. Money spent for physicians' fees increased an almost identical amount, 285 per cent. But the big jump in spending for drugs (413 per cent) and hospital care (864 per cent!) was responsible for the substantial rise in medical expenditures.

Parenthetically it should be noted that hospitals are continuing to get a bigger slice of the medical care dollar. They now get more than the physicians—25.8 cents to 24.5 cents. Since 1929, physicians' share has dropped from one-third of the total to one-fourth.

The January 5 issue of *Medical Economics* illustrates the money problem in medicine today. Some of the titles of articles are: "What the Democratic Congress Will Do," "What the Steel Workers Want from Medicine" (answer: total medical care, prepaid *in full*), and "U. S. Must Bail Out Our Medical Schools" Another article, an interview with the president of the New York County Medical Society, is "You Are Not Running a Private Concession." Doctor Norton S. Brown, leader of the nation's largest county medical society, compares medicine to a public utility which he defines as "A private enterprise so vital to the public interest that it has to have some supervision." With the right to supervise, it should be noted, goes the power to regulate.

According to Doctor Brown, "Medicine is, and should be, a private enterprise, but it too must be operated in the public interest. To whatever extent we can impose our own regulations on ourselves, we can escape the need for government regulation." The implication of this statement is clear—medical care must be provided at a price the people can afford. If it isn't, the government will step in.

It just happens that the lead article in the same issue of *Medical Economics* in which this interview was printed was "How to Write Collection Letters That Get Results." May we suggest another title for future use, "How to Write Letters to Steel Workers and Democratic Congressmen That Get Results."

L. F. R.

THE RIGHT TO CHOOSE

Guest Editorial

Lawrence W. Long, M.D., Jackson, Miss.

The traditional right of being free to choose where to live, what to eat, with whom to associate, where to work, what church to attend, where to send our children to school, how to vote, and the manner in which we are treated when ill is being seriously challenged. If organized labor, the "liberal" do-gooders in Congress, the parlor pinks, and social visionaries have their way about it, the American people shall soon have no choice about the source of their health care.

Third party medical care arrangements entering actively into the patient-physician relationship are nothing new. Some such plans are more than 100 years old although most aggressive, growing plans are relatively new. These include the Kaiser Health Foundation, sometimes called the Permanente Plan, the Health Insurance Plan of Greater New York, the United Mine Workers of Amerrica medical program, and numbers of miscellaneous, unclassified plans. Generally, closed panel health plans which deny free choice of physician and hospital to patients are sponsored by unions, management, or consumer groups. Naturally, legitimate commercial health insurance and the Blue plans are not closed panels. None of the latter abridges the privilege of free choice.

The right to choose one's physician and hospital is the most significant difference between the traditional pattern of medical care in our nation and closed panel plans.

The closed panel plans contend that the individual consumer of health services can not be expected to exercise the privilege of free choice intelligently because he is unable to appraise competence and quality in physicians. They say that financing mechanisms have changed so substantially that the traditional patient-physician relationship no longer matters. Finally, great sound and fury is raised alleging that insufficient controls exist to protect the patient from unethical, incompetent, and overcharging physicians. Some even go so far as to reject altogether the concept of individual responsibility for health care and, in Marxist-like fashion, say that "collective" responsibility for health maintenance is desirable.

Americans are a fiercely independent people. Our nation was conceived on the fundamental premise of man's freedom, dignity, and inherent right of self-determination. Long before there were closed panels or labor health programs, the principle of free choice operated successfully, assuring rights, privileges, and responsibilities of patients and physicians alike. Can it possibly be that after only a few years of closed panel experimentation we now have valid proof that human freedom is unimportant?

The smoke screen erected by closed panel groups is thin and transparent; their true purpose is easily seen. If the closed panel advocates, unions, and do-gooders will tell the truth, they will concede that neither the patient nor the physician is important: It's the plan that comes first. Conversely, conventional mechanisms of health service in our nation place the wellbeing of the patient first.

The weak, spurious objections raised against the traditional medical care pattern are totally insufficient to justify a sweeping change into a system where a non-professional third party regulates both physician and patient. Outside compulsion, however small or great, can weaken the individual's freedom to seek satisfaction for his needs; his initiative, dignity, and self-reliance are undermined. The physician can maintain his distinct professional personality only when he may exercise personal judgement within the framework of accepted scientific practices and ethical conduct. If the do-gooders want to destroy our present medical care system simply because a minute fraction of the profession overcharge on occasion, then these purely economic reasons are insufficient. Medical organization stands ready to discipline the unethical practitioner and its record of exercising these sanctions is good.

Under no circumstances should professional services be bartered commercially or become political, vote-bait issues. Conceding existence of a cold-to-hot war between private medicine and third party groups, physicians believe that the only winner should be the patient. UMWA says quite frankly that it renounces freedom of choice on a basis of preventing financial abuse of the program. Here is proof that a third party is more influenced by its own economics than by any desire to provide its beneficiaries with better medical care.

Medical organization wants to achieve only three things in its relations with third parties. First, doctors want the needs and wellbeing of the patient considered above all else; secondly, physicians seek maximum freedom of action and exercise of professional judgement with as little intrusion by third parties as possible; and, finally, physicians maintain that they alone have the right and competence to judge professional qualifications of doctors of medicine.

The medical profession will never abandon sick, suffering humanity to the selfish interests of third parties.

WHEN WE UNDERSTAND

Today's Health, published by the American Medical Association, is one of the most valuable magazines available. Its value can not be overestimated. This magazine should be in every American home, it should be read and re-read by every member of the family of reading age. Now we feel as enthusiastic over the *AMA News*. It is destined to render a great service to the profession. It seems that this publication might in some degree be available to the lay public also. We are sure the clouds of discord and confusion could be cleared away with a better understanding of medical service by the people. The very toughest problem can be solved when understood.

PRESIDENT-ELECT

Dr. R. J. Moorhead of Yazoo City is much in the news now. He is president-elect of the MAGP and has been chosen for the same place by the Association of American Physicians and Surgeons. Last year he served as vice-president of the Mid-South Postgraduate Medical Assembly. The Association of American Physicians and Surgeons rendered a fine service in the field of education. The essay contests have been very valuable. Dr. Moorhead of Yazoo City has brought a worthy honor to our state and to our state medical association.

AS MUCH AS FOR MEDICAL CARE

Says the medical news, "Americans are now spending as much for tobacco and alcoholic beverages as for all medical care. In 1957 the figures were: tobacco and alcoholic beverages .041 cents out of each expenditure dollar." Neither belongs to the list of human needs. The people might be better off in health and finances without either.

SYMPATHY

We offer our sincerest sympathy to Dr. Jim Hill of Corinth in the loss of an older sister, an outstanding school teacher for many years. Dr. Jim's family has been outstanding in medicine, in education, and in citizenship in church and in state. Dr. J. R. Hill is the father of Dr. Stanley Hill, president-elect of the Mississippi State Medical Association. And Dr. Jim, more than fourscore and four, is still active in practice and still looks to the future.

There is a definite relation between the fertility of the soil and the health of the people.

MID-SOUTH PRESIDENT

Dr. J. Max Roy

Our president, a busy Arkansas general practitioner with a special interest in psychiatry, has recently moved from Forrest City to North Little Rock, to enter a residency in psychiatry at the University Hospital.

Dr. Roy is a graduate of the University of Tennessee College of Medicine, class of 1941. He received his bachelor's degree from Union University, Jackson, Tennessee, in 1936 and worked for his master's degree at the University of Tennessee in 1937 at Knoxville.

He came to Forrest City, Arkansas, in June, 1942, built and operated a modern fifty-bed hospital. He married the former Janice Campbell, daughter of Mr. and Mrs. Zack Campbell of Humboldt, Tennessee. They have three children, twins, Billy and Judy, and Linda.

Dr. Roy has been president of the Cross-Saint Francis County Medical Society, president of the Third Councilor Medical District, a member of the Council of the Arkansas State Medical Society for this district, director on the Board of Arkansas Academy of General Practice, a member of the Arkansas State Medical Board representing the First Congressional District. He is a Shriner, a

Rotarian, and a deacon in the Presbyterian church.

November 1, 1958, he and his family moved to North Little Rock, Arkansas.

DR. CRAWFORD HEADS FIFTY-YEAR CLUB

The Fifty-Year Club of the Mississippi State Medical Association has suffered heavy losses in recent weeks. The passing of Dr. W. H. Frizell took its president. Dr. W. A. Evans was the first president of the club and Dr. Frizell succeeded and served since his death. Dr. Felix J. Underwood was the secretary even before he became a member of the club. Dr. Underwood rendered wonderful service to the club, aided by his efficient secretaries, Misses Ruff and Brinson.

Dr. Lampton Crawford of Tylertown now becomes the president. He will do honor to the office. The club at its eleventh annual meeting on the Coast will have a member of the club as its host.

TO OUTLAW FIRECRACKERS

Thank you, Doctor Wesson, for your fine response to our editorial on banning firecrackers. This will be a worthy project for the State Medical Association. I am sure Northeast Medical will be glad to start the move at our next meeting. We are asking Doctor Wesson to take the lead.

NEW HOSPITAL

Louisville, Mississippi, now has a nice up-to-date, fifty-bed hospital. Louisville is a fine town and well deserves this new medical facility. For a long while it has been a lumber center, the home of the Fair family which has been outstanding in industry and leaders for all progress.

Winston County has fifteen doctors, all of them having their address Louisville except two of Noxapater. The doctors in this county are able practitioners who will render better service through this modern hospital.

PAN-PACIFIC SURGICAL ASSOCIATION

The Eighth Congress of the Pan-Pacific Surgical Association will be held in Honolulu, Hawaii, September 28 through October 5 in 1960.

All members of the profession are cordially invited to attend and are urged to make arrangements as soon as possible if they wish to be assured of adequate facilities.

Further information and brochures may be obtained by writing to Dr. F. J. Pinkerton, Director General of the Pan-Pacific Surgical Association, Suite 230, Alexander Young Building, Honolulu 13, Hawaii.

SANATORIUM HEAD MEMORIALIZED

The January meeting of the Mississippi Commission on Hospital Care met in the library at the Sanatorium on Friday, January 9, 1959. All members were present except Mr. Owen Cooper, chairman. Vice-Chairman Billy Moore presided.

At eleven o'clock the members assembled with Mrs. Boswell, Dr. Clyde A. Watkins, superintendent of the institution, members of the official family and other friends for a brief memorial service to Dr. Boswell and the presentation of a memorial plaque furnished by the Commission.

Dr. Felix J. Underwood, beloved friend of Dr. Boswell across the years, had the following to say in presenting the memorial plaque:

"'We enjoy ourselves only in our work, our doing; and our best doing is our best enjoyment' . . . These words depict well Henry Boswell's zest for living and for doing. Even though his career has closed, his deeds and work live on. This beautiful plaque, which the members of the Commission on Hospital Care are dedicating to his memory, is a fitting tribute.

"It seems only yesterday, when public health momentum was getting under way with help from the Rockefeller Sanitary Commission, that Dr. Boswell, along with Dr. W. S. Leathers, Dr. Robert Rowland, Dr. R. N. Whitfield, and others, laid some of the important groundwork for a most constructive health program (1910-1916). Following this, he served as Mississippi's first full-time health officer (Prentiss County, 1916-1917) and then he was appointed as superintendent of Mississippi's State Tuberculosis Sanatorium. The steady growth and outstanding accomplishments of our Sanatorium under Henry Boswell's leadership have been conspicuously impressive. I am happy to have had the privilege of workinw with him on the same team and to have enjoyed many years of rewarding friendship. He was a dynamic, enthusiastic and thoughtful person and an internationally recognized crusader in the fight against tuberculosis. His happy marriage to a fine woman, who graced his home and made him a wonderful wife and devoted companion and mother of his fine children, lent additional support for his efforts.

"Dr. Boswell was a man of deep convictions, who spoke forthrightly for his beliefs. This had good effect in educating his many patients, who will long remember him for his many acts of kindness and friendship and the restoration of health they will enjoy.

"It is fitting that he was laid to rest in a spot of his own choosing on the beautiful grounds of

Seated, Mrs. Nichells, Dr. Clyde A. Watkins, Mrs. Henry Boswell, Dr. Underwood; standing, Dr. W. H. Anderson, Joe Carr, Lester Tuck, Dr. A. L. Gray, W. S. Moore, Foster Fowler, and Carl Blomquist.

the institution he served so long and well."

After this ceremony members of the Commission along with Mrs. Boswell and some relatives and friends went out to this beautiful spot where the stately pines sifted the winds as a harp and the placid water of the lake below with its soundless sparkle seemed to sense the sacredness of the occasion. Bare heads seemed to want to linger, especially he who delivered the memorial tribute lingered longer than the rest. Only a short time after Dr. Underwood reached Jackson, he received his final call. Thus two men who served their state and their fellowman supremely well passed on within months.

Dr. Henry Boswell was a very dynamic personality. In battle he could stand like Stonewall Jackson or he could be as aggressive as Bedford Forrest. His battle against tuberculosis has attracted world attention. A great executive, a great hospital administrator, he was also a great teacher. He taught his interns, his staff, and his patients. When his patients left the hospital they knew how to look after themselves and they could help others keep from contracting tuberculosis. He was outstanding in public relations. He was a master in political battle once he engaged. Before entering the arena he usually weighed carefully to see if truth and facts were on his side. In hospital administration it was marvelous the amount of service he could give for the price paid. It was amazing the number of people he knew by name and the attention he gave to the individual as well as to the disease.

Dr. Felix Underwood was in truth a great generalissimo in the field of preventive medicine. His name too is known around the world. He laid his plans carefully against disease and executed them without retreat. He knew the dividing line so well between public health service and general practice. His fight was always for life and it is estimated that he helped save a million. He not only saved lives but he extended years with a bigger volume of life. He was quiet, kind, and considerate. His convictions were deep and strong and his courage was strong enough to carry through on what he believed. He was the embodiment of medical ethics. In addition to his wonderful personality, he was a great student, a stickler for perfection, well-read, widely traveled, and seasoned in the knowledge and the wisdom of public health service.

In the political field he was very strong. He was urged to run for governor many times. Few men in public life in our state had more influence with the legislature. He dealt with the members fairly. He gave them facts, used reason and showed them the needs of funds for his health program.

The modern public health building near the medical school bears his name and was named while he yet lived. This is unique and makes history. We are sure that hundreds of friends were behind this, but a major influence came from Governor J. P. Coleman. This building is a visible monument, but the invisible that will never perish is in the lives he saved and in the health assets he built

Dr. A. L. Gray has taken over the work of Dr. Underwood and is proving a worthy successor.

GOOD ECONOMY

It is estimated that more than 22,000,000 people will be admitted to hospitals in the United States during the coming year, three and a half million babies will be born in hospitals the coming year, and more than 80,000,000 will pay outpatient visits to hospitals during the year. People accept hospital care as good economy in illness. Hospitals have indeed come to mean life more abundantly.

MISSISSIPPI HEART ASSOCIATION

The Mississippi Heart Association announces that application may be made now for research grants-in-aid for the fiscal year 1959-1960. Deadline for the applications is March 1.

Grants are made to non-profit institutions in direct support of a particular investigator for a specific program of research under his direction, according to Dr. Rush Netterville of Jackson, chairman of the Research Grants and Fellowships committee which reviews all applications.

Further information and application forms may be secured from the Mississippi Heart Association, 145 East Amite Street, Jackson.

SOUTHEASTERN SURGICAL CONGRESS

The Southeastern Surgical Congress will meet in its twenty-seventh annual assembly March 9, 10, 11, 12, 1959 (Monday, Tuesday, Wednesday, Thursday), at the Deauville Hotel, Miami Beach, Florida.

RESIDENT WANTED:

The Methodist Hospital, Memphis, Tennessee, 425 beds now in operation and 500 beds by January 1960, is establishing a one-year RESIDENCY IN INTERNAL MEDICINE beginning January and July, 1959. Salary $325.00 per month. Uniforms and food provided. Living-in optional. Women eligible. Approval pending inspection May 1959 and will be retroactive to January 1959. For information, contact J. M. Crews, Administrator, Methodist Hospital, Memphis, Tennessee.

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MENTAL ILLNESS?

Many top authorities feel that mental illness or other personality disturbances are usually significant factors in criminal behavior, delinquency, suicide, alcoholism, narcotic addiction, and very often in cases of divorce-

About 1,750,000 serious crimes are committed a year.

About 50,000 people are addicted to narcotics.

About 4,000,000 people are problem drinkers.

About 17,000 people commit suicide each year.

About 500,000 cases come before the juvenile courts each year.

For every four marriages there is one divorce.

ANNOUNCEMENTS

Samuel B. Johnson, M.D., and Adna G. Wilde, M.D., (consultant), announce the association of J. G. Nassar, M.D., in the practice of ophthalmology, Suite 611, Medical Arts Building, Jackson, Mississippi.

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Urological Emergencies*

THEODORE R. FETTER, M.D.†
Philadelphia, Pennsylvania

Reorientation of our impressions of urological emergencies is apparently necessary in order to practice good general medicine. For this reason, the subject of urological emergencies is very appropriate for discussion before any medical group. It is understandable that in the development of any specialty there is a tendency to place emphasis on certain conditions and happenings in the pathogenesis of disease which may appear minor to the thinking of many physicians not familiar with the eventual facts. It is true, however, if a better understanding of these conditions is appreciated, the problem of therapeusis is simplified and the results of treatment should obviously be improved. I do not mean to infer that a urological emergency necessarily leads to operative intervention. Urologists generally have the impression that urologic disease is not considered seriously enough by many practicing physicians and surgeons.

In the consideration of the differential diagnosis of the acute abdomen I am sure that we all agree that the urologist is usually one of the later consultants. We hold no brief for the removal of a normal appendix in the case of a calculus in the right ureter. If a proper history is obtained; a good urinalysis, for the presence or absence of red blood cells, infection or crystals; a routine roentgenogram of the abdomen, the greater majority of cases of calculi will be revealed. The occurrence of nonopaque calculi is recognized.

It is therefore important to retain and reaffirm our faith in a complete history and physical examination. Information must frequently be obtained from the family or friends, especially when, as is often the case, the patient is admitted to the emergency service. The majority of errors in diagnosis may be attributed to a paucity of the facts. The percentage of error is bound to be small if sufficient time and thought are given to a surgical abdomen in relation to urologic disease.

Differential diagnosis of obstructive uropathies and the acute abdominal emergencies is difficult. In a study based entirely upon clinical material, it was noted that six outstanding conditions account for the greatest percentage of errors in the differential diagnosis of the acute abdomen. These are: 1) acute appendicitis, 2) acute cholecystitis, 3) renal and ureteral calculus, 4) perforated peptic ulcer, 5) acute hemorrhagic pancreatitis, 6) coronary occlusion. Conditions occurring less frequently were also noted: acute suppurating pyelonephritis, intestinal obstruction, perinephritic abscess, ectopic pregnancy, acute salpingitis, twisted ovarian pedicle, myocardial infarction, mesenteric thrombosis. Trauma or extreme physical exertion and its relation to acute abdominal disease is most interesting. Ruptured abdominal aneurysms have been noted followed by anuria; ruptured hydronephrosis is another example.

CASE I — A patient aged 78, playing golf, had a sudden onset of severe abdominal pain and weakness. Internal hemorrhage from a ruptured abdominal aneurysm was suspected. No urine was obtained during the following twenty-four hours. Postmortem examination confirmed a massive hemorrhage from an aneurysm of the abdominal aorta above the renal arterial bifurcation.

CASE II — A child, nine years of age, was brought to Jefferson Hospital with a complaint of sudden abdominal colic which occurred twenty-four hours after a fall from his bed. The child did not appear very ill, although there was generalized abdominal tenderness and rigidity in the right flank. There were no urinary symptoms at any time. There was nausea and vomiting. Rectal examination was negative. The urine was not infected but a number of red blood cells were noted per low power field. An intravenous urogram revealed irregular distribution of the contrast medium in the right renal area. The left urinary tract appeared normal. A preoperative diagnosis of ruptured hydronephrosis was made. At operation, this was confirmed.

These two cases illustrate the factor of trauma as the trigger mechanism in precipitating the events of a surgical abdomen with urological implications.

SPECIAL EXAMINATIONS

In order to rule out urologic disease in this group of patients, with as much historical data as may be available, certain examinations are indicated. Obviously, urinalysis is essential. Routine analysis is frequently insufficient. Infection must be ruled out. This can be accomplished only by obtaining a clean specimen for a stained smear. Catheterization of female patients is of prime importance. In the male patient one may be able to obtain a voided specimen. This is preferable, since catheterization may induce bleeding and thus nullify much that is learned from the examination. A complete study of urine, carefully obtained, should determine whether or not one is dealing with obstructive disease and/or urinary infection. The significance of red cells in the urine cannot be overestimated, since this may lead to the correct diagnosis of renal or ureteral calculus. The presence of bacteria, particularly gram-negative organisms with leukocytes, should be weighed carefully. Acute alimentary disease and urinary infection may be coexistent.

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†Professor and Head of the Department of Urology and Nathan Lewis Hatfield Professor of Urology.

†From the Department of Urology, Jefferson Medical College and Hospital, Philadelphia, Pa.

*Presented at the Mid-South Postgraduate Medical Assembly, seventieth annual session, February 9-13, 1959. Memphis, Tenn.

BLOOD STUDIES

Complete blood studies are also essential. Much depends upon proper interpretation, particularly since many of these patients may have had previous medication with antibiotics. Thus one may be led astray by a low leukocyte count. A differential study of the white blood cells is helpful in this regard. Blood sedimentation rate may be valuable. In acute renal infections the leukocyte count increases rapidly (25,000 or more) within twenty-four hours. In acute abdominal conditions this may also occur, though possibly not so rapidly. This point is often overlooked. Certainly it does not receive the consideration which clinical experience warrants. Blood urea nitrogen, sugar and electrolytes are essential, not only in diagnosis but for therapy.

X-RAY EXAMINATION

X-ray examinations play an important role in differential diagnosis of urologic disease and other abdominal conditions. The preliminary study of the abdomen by x-ray frequently gives the clue to subsequent diagnostic procedures. One must be able to interpret the plain roentgenogram of the abdomen. As far as the urinary tract is concerned, the chief points are the size, shape and relative position of the kidneys. The renal areas are frequently obscured by gaseous shadows. Secondly, one should be able to observe the psoas line. The various curvatures of the lumbar spine should be studied. Calcific densities suggestive of renal or ureteral calculi must be ruled out. Anyone with practical experience in the matter of recognition of calculi from a study of the plain roentgenogram realizes the difficulties involved. Perirenal masses are noted by obscurity of the psoas muscle line, with or without deflection of the lumbar spine, an abnormal renal position or, possibly, distortion of the diaphragmatic outline.

Intravenous Urography. Intravenous urography is a valuable diagnostic aid in acute abdominal conditions. The chief danger in using it routinely in these patients is the difficulty in determining renal capacity. In our clinic intravenous urography is not routine until we have some concrete evidence that there is sufficient renal function to excrete the contrast medium. This point is important and must not be minimized. Renal insufficiency is frequently coexistent with acute abdominal disease. If renal function is already impaired, unfortunate results can occur. The patient may be hydrated by intravenous infusion of fluids, if there is no contra-indication, after which an intravenous urogram may be done to determine the presence or absence of obstructive disease. Retrograde pyelography will confirm or rule out urologic disease. It is especially valuable in that it will reveal any filling defect which may be due to a non-opaque calculus, or reveal an abnormal ureteral outline which may be valuable in extra-urinary masses.

Cystography and Urethrography. Cystography and urethrography are particularly helpful in those cases in which there has been trauma to the pelvis, bladder and/or urethra.

Other Methods. Retroperitoneal pneumonography—injection of carbon dioxide into the retroperitoneal space—has assumed a major role in differential diagnosis of abdominal conditions, particularly retroperitoneal masses and tumors of the adrenal gland. Translumbar aortography and injection of contrast media through the femoral vein are additional methods of roentgenologic aid in the diagnosis of obscure lesions in the abdomen. It is fairly obvious that these latter studies should be classified as special aids; they require special experience in administration and interpretation.

CYSTOSCOPY

Acute abdominal disease is no contra-indication to cystoscopy. In our clinical experience we have seen no ill effects on the patient's condition caused by cystoscopy. In many cases it is lifesaving. Ureteral catheterization will give considerable information as to obstruction of the upper urinary tract and function of the kidneys. It often relieves acute abdominal conditions that might have been considered surgical.

CASE III — A patient admitted to the emergency ward of Jefferson Hospital presented symptoms of acute intestinal obstruction. Bilateral renal calculi had been removed by operative procedures on previous occasions. There had been many episodes of urinary tract infection. On admission the abdomen was markedly distended. There was generalized abdominal tenderness; the patient was very toxic. There was a paralytic ileus. A plain film of the abdomen revealed no shadows suggestive of calculi. In consultation it was decided to carry out cystoscopy and catheterization before any surgical procedure. Upon introduction of catheters to the upper urinary tract, there was a rapid flow of purulent urine from the left renal pelvis. Within several minutes, alimentary activity was resumed, and there was prompt improvement.

This is not an uncommon picture in persistent renal infections, in which there is an accompanying feature of renal damage, producing toxemia and uremia, and finally paralytic ileus.

CASE IV — A forty-eight-year-old man was admitted to Jefferson Hospital with a history of nausea, vomiting and severe abdominal pain in the right flank, which radiated upward and posteriorly to the right kidney. The nausea was particularly severe. He was dehydrated and quite toxic. There was tenderness and rigidity in the right lower quadrant of the abdomen, but no renal tenderness. The temperature was slightly elevated. An extraordinary white blood cell count was noted—11,000 on admission. It gradually rose, within six hours, to 29,000 with a predominant shift of polymorphonucleocytes. A plain film of the abdomen did not reveal any evidence of a calculus. Because of severe toxemia of the patient, it was decided not to carry out an intravenous urogram. The differential diagnosis appeared to rest between ureteral calculus and acute appendicitis.

The tremendously rapid increase in the leukocyte count was convincing of renal toxemia and infection, despite the fact that urinalysis did not reveal any bacteria, but only an occasional red blood cell. Therefore, it was decided to explore the abdomen. The appendix was injected, and considerable vascularity of the retro-appendiceal area was noted. After the appendectomy, cystoscopy was done. A catheter was passed to the right renal pelvis. No obstruction was encountered; except in the upper ureteral segment. Two cubic centimeters of bloody urine were obtained. A Johnson spiral was then introduced into the right ureter and advanced upward. Upon its removal, a small calculus was obtained. A ureteral catheter was permitted to remain for drainage, and removed after four days.

The patient continued to improve, but complained of considerable difficulty on urination. Elevation of blood urea nitrogen was noted. He was placed on continuous bladder drainage. Improvement continued. Cystoscopy, later, revealed a contracture of the vesical orifice. Transurethral revision of the vesical orifice was done, and complete recovery followed.

This case illustrates several points; the onset of an illness, the severity of which produced a renal toxemia as a result of rapid dehydration and obstruction; clinical features suggestive of ureteral calculus and acute appendicitis; rapid increase in the leukocyte count; a negative study for calculus by plain roentgenogram, bladder neck obstruction. After a careful history was obtained in this case, the patient revealed that he had had symptoms of dysuria, frequency, hesitancy and nocturia for a number of years. This was not taken into account in the preliminary survey. A sudden acute illness was superimposed upon the chronic, longstanding lesion: namely, bladder neck obstruction. Coexisting lesions in the urinary tract are frequently encountered. This case illustrates a dual obstructive uropathy with the presenting symptoms and signs of an acute abdomen.

INFECTION

The question as to whether a particular urologic infection constitutes an emergency is somewhat difficult to establish in a pedantic manner. On the one hand, the patient with the pointing flank mass, tenderness, and elevated temperature obviously requires immediate surgical intervention; however, it is not so clear-cut when the practitioner encounters the patient with vague clinical signs and infected urine (with possible diagnosis of pyelonephritis made). In this latter case we feel the physician is faced with a true emergency to the extent that a serious disease exists and that all steps to preserve renal function should be instituted immediately.

In the majority of cases acute pyelonephritis will clear spontaneously, especially with the appropriate antibiotic. However, in the presence of repeated infectious episodes the insult to the kidney will manifest itself by extensive fibrosis with resultant destruction of the collecting system and glomeruli. The effect of all this may lead to renal insufficiency. In other words, we cannot afford to minimize clinical findings. All efforts to rule out unlerlying congenital obstruction, calculus disease, and other pathologic conditions leading to infection should be made.

Cortical abscess or carbuncle and perinephritic abscess usually require surgical intervention together with the appropriate antibiotic. The most common organism found is Staphylococcus aureus, but others are seen, such as the colon bacillus, Mycobacterium tuberculosis and on rare occasions, parasites.

Involvement of the perirenal area occurs from either direct extension of a cortical abscess or from a distant focus of infection such as a furuncle.

Differential diagnosis should include psoas abscess, osteomyelitis, pyelonephritis, and other unrelated diseases in the region of the kidney, such as carcinoma of the colon, and retrocecal appendicitis. Fistulae from the kidney into the pleural cavity and lung, and into the gastro-intestinal tract have all been reported.

Several other infectious processes deserve mention. Acute papillary necrosis as the name implies signifies an acute necrosis of the renal papillae. It is most often bilateral, seen in the presence of diabetes and sometimes is associated with obstruction. It is only through prompt management of the diabetes, control of the infection, and relief of the obstruction (if present), that will lead to the recovery of the patient. The prognosis is extremely grave. Acute cortical necrosis, although uncommon, is likewise severe, bilateral, and the cause is unknown. It is mentioned since the treatment is entirely symptomatic and surgical intervention is not justified.

Pericystitis, fortunately rare, demands immediate attention. As the term implies, it is an infectious process that extends from the bladder mucosa through the serosa and into the pericystic area. These patients are usually toxic and seriously ill; prompt drainage is important, together with disposal of the initiating cause if possible, such as bladder calculi.

Remember, never minimize infections of the urinary tract. It is true that many cases respond to simple therapeutic measures, but there is a tremendously large group who progress into chronic renal disease because the pathologic physiology of infections is not appreciated.

OBSTRUCTION

Any interference with the free passage of urine must obviously be dealt with promptly. Management depends upon the cause. Obstruction from impacted renal calculi, trauma, hemorrhage or infection have been or will be dealt with in other parts of this paper.

The most common condition is acute retention of bladder urine. In cases of postoperative retention an indwelling catheter serves the purpose of relief very well. In fact, prophylactic insertion of a catheter is done in many centers today, preliminary to abdominal and pelvic surgery. Interval catheterization has its adherents, and if done well under favorable conditions, cannot be criticized. Obviously, infection does occur. We feel that removal of large volumes of urine per single catheterization should be discouraged. It is also unwise to allow a patient to become abnormally distended with urine with the hope that catheterization may be avoided. Previously undiagnosed neurogenic dysfunction may be brought to light in some of these patients.

Acute retention in the newborn may be the result of external urethral meatal stenosis, which may be promptly relieved by a meatotomy. Other congenital anomalies of children, such as posterior urethral valves may cause chronic retention with its damaging results. Too often renal damage has progressed to the point that only diversion of the urine by nephrostomy will be lifesaving.

In cases of chronic retention as is seen in the elderly patient with prostatic hyperplasia, we strongly advocate gradual decompression, via an indwelling urethral catheter. At Jefferson Hospital we utilize a decompression apparatus based on the principle of hydrostatic pressure. However, if such an apparatus is not available, withdrawal of from 200 to 300 cc. of urine followed by 100 cc. every hour until the bladder is decompressed will serve the purpose. We have seen severe cases of hemorrhage when this practice was not carried out.

In cases where we are unable to insert a catheter via the urethra, as in severe stricture, we resort to suprapubic cystostomy. The cystostomy tube may be placed under local anesthesia if the patient's condition so warrants.

CALCULOUS DISEASE

Impacted renal and ureteral calculi are very definite emergencies. A calculus may also cause an acute block in the lower urinary tract. Relief is obtained by prompt removal of the calculus. The problem of impaction of calculi in the upper urinary tract is more complicated. Non-function of the kidney and infection play an enormously important role. If proper evaluation of available clinical facts is made multiple operative procedures may be avoided. The removal of an impacted calculus should be accomplished as soon as possible in order to restore renal function, and obtain adequate drainage. Infection, if present, will respond promptly to therapy. Complications occur in direct proportion to operative delay. One cannot overemphasize the importance of prompt recognition and management of an impacted calculus. It is not only lifesaving but real preventive medicine can be practiced by preserving renal health.

CASE IV — J. B., female, age 56, was admitted to Jefferson Hospital acutely ill. Temperature was 104° F.; left flank pain and palpable tender mass, presumably renal, was noted. The leukocyte count was 13,000; the urine was purulent; blood urea nitrogen 22.8 mgms. per cent; phenolsulfonphthalein 30 per cent in one half hour. An intravenous urogram revealed a non-functioning large left kidney; a calcific density in the area of the ureteropelvic junction. The right urinary tract was normal. At operation, a calculus was removed, releasing a large amount of purulent urine. Dramatic improvement of the patient was the result. This patient gave a history of repeated episodes of urinary infection with periods of elevated temperature and pain in the left lumbar area. She was also hypertensive, which was assiduously treated with beneficial results. The hypertension was temporarily relieved following operation but has assumed its former levels.

This type of case is not uncommon. Chronic renal disease is frequently a concomitant result. In numerous instances hypertension and unilateral renal disease are encountered. Removal of the obstructive factor does not necessarily improve the hypertension, but complete removal of the kidney is more apt to do so. However, patients with impacted calculi, infection and hypertension do not tolerate nephrectomy too well. It is better judgment to institute drainage and later a secondary nephrectomy if total destruction of the kidney has been established.

Bilateral renal calculi present another difficult problem. The management is complicated. These patients are constant candidates for any emergency. The single solitary kidney with calculous impaction is obviously in need of prompt attention. Congenital anomalies of the upper urinary tract present a real diagnostic problem. Congenital hypoplasia of one kidney, a compensatory hypertrophy of the contralateral kidney with an impacted calculus has been encountered. These patients are generally in a poor state of renal health and treatment invariably is delayed because urine volume may be partially maintained by the hypoplastic kidney and impart a false sense of security to the physician. If the urine is carefully studied, it will be noted that the specific gravity is very low—in fact there is no evidence of any concentrating ability of the kidney to excrete solids. The delay period can be avoided by thorough understanding of the physiologic principles of urine filtration.

There are many variants of obstructive disease due to impacted calculi. Unless we appreciate the ultimate damage to the kidney in this particular group, chronic renal insufficiency will increase and death is the inevitable result.

In the non-calculous group of obstructions hydronephrosis is most commonly encountered due either to intrinsic or extrinsic causes. Calculus can produce a rupture of a hydronephrosis, with subsequent extravasation of urine. This may also occur in the non-calculous group, probably more frequently, e. g. (CASE II). Hydronephrosis *per se* may not be an emergency problem but at least it is an urgent one, particularly in children.

Extrinsic factors producing obstructive disease of the urinary tract require prompt attention because of progressive renal impairment. This is particularly true in cases of malignant disease which causes ureteral obstruction. Some type of urinary diversion must be considered, in order to preserve life. The advantages of one type of diversion over another need not be discussed here.

Pregnancy and acute obstructive diseases of the urinary tract is a constant difficulty in management because of the multiplicity of problems with the patient, the obstetrician and the urologist. It should be stated, without fear of contradiction, that an obstruction must be relieved, particularly an impacted ureteral calculus accompanied with infection. The threat to the life of the mother and interruption of the pregnancy are uppermost in mind if prompt treatment is delayed.

Operative correction of a hydronephrosis may subsequently cause an emergency, either by persistent uncontrollable infection, requiring secondary nephrectomy; or leakage from a plastic repair of a hydronephrosis, necessitating drainage; or intubation itself may recreate another problem, a dense stricture which does not respond to dilatation and necessitates either reoperation—nephrectomy, or substituting an ileal segment for the destroyed ureter.

HEMATURIA

The significance of blood in the urine cannot be overestimated. The most common cause for either microscopic or macroscopic bleeding is infection. Hemorrhagic cystitis, occurring usually in women, causes a massive bleeding and is so startling to the patients that they must be reassured that there is no cancer. Cystoscopy at two or three week intervals is advisable, until the mucosa of the bladder appears normal. Massive bleeding from a hyperplastic prostate is not uncommon and if control cannot be obtained by electrocoagulation, cystostomy must be done. In some instances there is an associated tumor of the bladder, which complicates therapy. Needless to say, the origin of the bleeding must be determined before definitive treatment can be instituted. The delay period in these cases is shocking and does no credit to the medical profession. It is quite true that the prognosis of tumors of the bladder is directly related to the onset of bleeding and the time of examination. May I repeat that a complete urological investigation is imperative. Blood dyscrasias must be ruled out by proper studies. A diagnosis can be made in the majority of cases. The examination should be carried out during the active period of bleeding. Bloody urine may be noted from either ureteral orifice, which obviously is of great value in the work-up of the cases. Occasionally it is not possible to state definitely the cause of hematuria. These patients must be re-examined at regular intervals. Incipient disease of the upper urinary tract, including tumor, tuberculosis, hydronephrosis, etc., may not be recognized by our present diagnostic methods. Essential hematuria is not a conclusive diagnosis. All of us have seen hemorrhage from the upper urinary tract which did not fit into any disease pattern. Such kidneys have been removed and the pathologist could not find a valid reason for the occurrence of the hemorrhage. Lesions of the papillae can cause severe bleeding but pyelography is not sufficiently definite to make the clinical diagnosis. Vascular lesions may be recognized by aortography, if one has developed sufficient skill in their interpretation. If there is any indecision of the diagnosis in cases of hematuria, repetition of the study is obviously necessary. Acute pyelonephritis and tuberculous nephritis frequently have an onset of gross hematuria, similar to the patient with hemorrhagic cystitis. Despite the negative cultures of the urine, we should consider these patients as having a bacterial infection, including the possibility of tuberculosis.

A concept of early urinary tract disease must be developed if a final diagnosis of hematuria is to be made in a certain percentage of cases where the true cause of the hematuria is not immediately evident. Delay in the examination is not warranted and not supported by clinical facts. Intelligent and sympathetic management of these patients should be the rule.

TRAUMA

Traumatic lesions of the genito-urinary tract in the male and the urinary tract of the female are frequent in occurrence. The incidence is steadily increasing due to modern living, travel and the emphasis on physical training. Education of the parents is necessary, because a boy may be injured while playing, return home and void bloody urine. During the past year, four children were operated upon for ruptured kidney. A sudden, acute swelling in the scrotum may very well be due to torsion of the testis and spermatic cord. These conditions must be recognized as emergencies. In the case of torsion of the spermatic cord the testis becomes gangrenous and must be removed. It is well to operate on the contralateral side in order to prevent a similar happening, by fixing the cord to prevent excessive mobility. It is our impression that torsion of the spermatic cord occurs because of its excessive length and mobility. Differential diagnosis from other scrotal enlargements is not difficult. The affected side is swollen and painful. The skin of the scrotum is smooth, pinkish and pits on pressure due to excessive lymph, the cord is not definable. These findings with the history and absence of urinary infection should direct the physician to the correct diagnosis. Operation is imperative; if accomplished within four or six hours after the onset the testis may be salvaged.

Injuries to the urinary tract may be associated with damage to the abdominal viscera, chest or pelvis. The kidney by virtue of its location is well protected so that considerable force is necessary to cause injury to a normal organ. Injury can result by direct force such as a blow, severe fall on the loin, gunshot or stab wounds. Transmitted force such as a sudden crushing blow to the abdomen may cause the kidney to rupture. One must keep in mind that, although quite rare, rupture can occur in instances of hydronephrosis, tuberculosis, calculous disease and tumor. This is extremely important in industry inasmuch as compensation claims are based upon the physician's interpretation of the course of events.

Kidney injury varies from small contusions and lacerations all the way to complete pulpefaction and destruction of the kidney with extensive hemorrhage. The clinical signs are directly related to the degree of associated hemorrhage and secondary extravasation of urine. Laceration of the capsule invariably results in hemorrhage into the perirenal tissues and with extension to the calyx or pelvis and extravasation of urine. If the capsule remains intact only subcapsular hemorrhage occurs. The vascular pedicle may be torn away from the kidney with severe hemorrhage. Thus, the clinical symptoms and signs are directly related to the degree of hemorrhage which occurs rapidly. In nearly every instance, unless the ureter is completely severed from the pelvis, there is gross hematuria. Pain due to sudden distention of the tissue spaces is invariably present. If hemorrhage is severe, the patient will be in shock from acute blood loss and in such instances the mass in the flank is apt to be gradually increasing. The possibility of other serious injuries contributing to the general picture must be recognized.

Treatment is designed to correct the immediate shock by replacement blood transfusion and careful observation of the patient for evidence of progressive alarming bleeding by increase in size of the retroperitoneal mass, an increasingly rapid, thready pulse and falling blood pressure, depression of the blood count and hematocrit, or massive hematuria, particularly with bright arterial clots. In such instances, immediate operation is urgent and frequently life saving. In many instances, this is not necessary and conservative observation of the patient's condition eliminates the necessity of operative intervention. Some advocate immediate operation following retrograde catheterization and pyelography of the injured side in order to avoid the late complications of conservative management such as organizing hematoma with fibrosis, stricture, cyst formation or perirenal abscess. Personally, I see no need of retrograde study unless the condition warrants it and intravenous urography is totally unsatisfactory. Attempts to control hemorrhage by ligature and repair of lacerations of the kidney are not too successful. Clinical judgment must be used to the utmost in these injuries. In any case one must be assured of the pressure and status of the opposite kidney. Due to peritoneal irritation an intestinal ileus may develop, necessitating the placement of a Miller-Abbott tube.

Ureteral injuries are frequently encountered with injuries of other abdominal viscera. The ureter is rarely completely severed in industrial or auto accidents, but penetrating injuries such as a bullet, shrapnel, bayonet, or stab wounds have produced ureteral damage. The physical findings will not be evident until the urinary extravasate produces clinical signs and symptoms. Here again the intravenous urogram is very helpful and if questionable, cystoscopy and retrograde study. All such penetrating injuries demand surgical exploration and the condition of the ureter ascertained along with examination of the abdominal viscera.

The higher percentage of ureteral injuries we encounter are the result of accidental perforation by ureteral instrumentation for stone or stricture or diagnostic study and operative injury during difficult pelvic surgery and therefore seen more frequently in the female. Symptoms indicating cystoscopic manipulative injury to the ureter are related to the urinary extravasate which occurs at the site of the injury and consists of pain and low grade fever unless secondary infection sets in, in which case chills and fever with abscess may ensue. Most cases of uncomplicated ureteral injury will subside spontaneously in a few days on antibiotic therapy. If the urinary tract is infected at the time of perforation, surgical drainage along with correction of the underlying pathologic process is indicated. Operative injury to the ureter during pelvic operations is usually ligation or division with ligation of one or both ureters. If recognized promptly deligation is done and if the ureter is completely severed anastomosis can be readily done. A unilateral ligation may give no immediate symptoms, but usually does cause pain on the ligated side. Bilateral ligation is suspected within the first 24 hours by presence of anuria. Intravenous urogram and cystoscopy will demonstrate the cause. In such instances nephrostomy will preserve kidney function and permit at a later date proper reconstructive surgery for establishment of urinary tract continuity.

Injuries to the bladder are frequently associated with some injury to the urethra or occur so often in conjunction with such common etiological factors as a severe fall, blow, or fractured pelvis. Bladder trauma may be either intraperitoneal with extravasation of urine directly into the intraperitoneal cavity or extraperitoneal, in which case urinary and bloody extravasate occur into the perivesical tissues. In either instance, however, pain and shock are present and if untreated rapidly leads to death or if delayed, to high morbidity. Intraperitoneal rupture is more often associated with a distended bladder so that it is more often encountered in the alcoholic, the tabetic, patients with chronic retention and in patients with voluntary retention of urine. Extraperitoneal rupture is more frequently encountered in crushing injuries of the pelvis and often is associated with serious damage to the urethra. Since the membranous urethra is firmly fixed to the superior and inferior fascial coverings of the urogenital diaphragm any violent force disrupting the symphysis pubis will cause a tear at the apex of the prostate where the prostate and membranous urethra join. In fracture of the pelvis it is not unusual to find extraperitoneal rupture of the bladder in conjunction with severance of the membranous urethra. Diagnosis of such injuries should not be too difficult if careful examination is made. The presence of blood at the external urethral meatus, swelling or ecchymosis in the perineum, bogginess over the prostate or its displacement, tenderness to palpation of the lower abdomen, a mass in the suprapubic area, generalized abdominal rigidity and signs of shock or impending shock, all suggest strongly serious injury to bladder, urethra or both. Do not lose sight of the fact that renal or other serious injury might have occurred. In a recent case of fractured pelvis, intraperitoneal rupture of the bladder and a tear of the uterine artery was found.

In the management of these cases it is not wise to request the patient to void immediately because of the possibility of producing further damage, particularly if you are led to suspect urethral injury. Many of these patients will void spontaneously and unintentionally; if bloody urine is noted a diagnosis of bladder or urethral injury may be suspected. In females prompt catheterization may be done. In males it is best to wait until your initial examination has been made, and management of shock, if present, by intravenous fluids and replacement blood transfusions. A scout film of the abdomen and pelvis obviously is indicated. At the same time if a catheter has been placed a contrast media may be injected into the bladder and a cystogram obtained, films are made with the bladder filled and emptied. Evidence of extravasation of the dye may then be observed. The status of the urethra is determined by urethrogram, by gradual and gentle injection of a contrast media into the urethra. X-rays may then be made. A urethral rupture is readily revealed. On insertion of a small, soft rubber catheter into the urethra, a rectal examination will reveal the catheter by palpation immediately beneath the rectal wall indicating rupture of the membranous urethra.

On the other hand if rectal examination demonstrates the catheter to be apparently in the bladder the cystogram may be done.

Urethral and bladder injury may also be done by instrumentation. Transurethral resection of the prostate is responsible in many instances for localized extravasation in the periprostatic tissues. These patients must be kept on continuous catheter drainage for an extended period of time. In case of high morbidity suprapubic cystostomy is indicated. Resilient strictures of the urethra may be responsible for false passages produced by instrumentation, infection and suppuration may ensue. Proper management is adequate drainage.

Rupture of the bladder requires prompt drainage of the extravasate, repair of the break is not necessary. Urethral rupture is likewise treated by incision and drainage of the extravasate if present and placement of a catheter through the urethra into the bladder. It has been my experience that the traumatized urethra does not lend itself to adequate repair.

ACUTE RENAL FAILURE

The kidney might be described as having three main functions; 1) excretion of body waste metabolites, 2) regulation of fluid and electrolytes, and 3) assisting in regulation of blood vascular pH which in turn affects tissue pH. When these important functions are lost or damaged, it is up to the physician to take over kidney function by substitution, even though it must be in a much less efficient and effective way, in an attempt to maintain hemostasis until the kidney can be restored to its normal function by the body reparative processes.

It should be mentioned that there are other conditions besides acute renal shutdown due to tubular necrosis, that give the symptoms of oliguria and even anuria (which is seldom seen in true tubular necrosis alone). Some of these are severe dehydration, renal artery thrombosis, massive cortical necrosis and acute glomerular nephritis.

Other terms such as crush syndrome, shock kidney, lower nephron nephrosis, acute tubular nephrosis, and acute anuria, have been applied to this syndrome, but all of these conditions give an almost identical clinical picture and thus are treated generally in the same fashion. Pathologically, studies have shown that the main defect is destruction and non-function of the tubule, whether it be the epithelial element or whether it be the basement membrane that is disrupted.

The significance of these two slightly different pictures is that in cellular (epithelial damage) almost complete return of function may be hoped for, whereas, in destruction of the basement membrane there is little hope of cellular regrowth with resultant loss of kidney function.

The various causes of acute renal failure are listed below, according to Merrill:

- Hemorrhage
- Wounding
- Crushing injuries
- Burns
- Abdominal emergencies (perforated ulcer, pancreatitis, peritonitis)
- Major elective surgery

Intravascular Hemolysis

- Incompatible blood
- Accidental infusion of distilled water
- Transurethral resection using water
- Blackwater fever
- Following quinine as abortifacient

Vascular

- Bilateral renal emboli
- Mesenteric thrombosis
- Bilateral cortical necrosis
- Thrombosis of renal artery

Infection

- Acute hepatitis
- Acute cholecystitis
- Transfusion of contaminated blood
- Pyelonephritis (necrotizing papillitis)
- Clostridium Welchii (Septic abortion)
- Pneumonia, Septicemia

Hypersensitivity

- Acute glomerular nephritis
- Polyarteritis
- Lupus erythematosus
  - Sulfonamides
  - Poison Oak
  - Penicillin

Obstructive Uropathy

- Intrarenal precipitation of sulfonamides
- Intrarenal precipitation of uric acid crystals after therapy for leukemia:
  - Radiation
  - TEM
  - Nitrogen mustards
- Obstruction of ureters due to tumor
  - Metastatic stomach carcinoma
  - Carcinoma of cervix, prostate
  - Endometriosis
- Ligation of ureters during hysterectomy
- Obstruction of ureters:
  - Stone

Hematoma
Blood clot

Nephrotoxins

Bichloride of mercury
Carbon tetrachloride
Phosphorus ingestion
Chloroform ingestion
Toluene
Mushroom ingestion

Water and Electrolyte Loss

Severe enteritis and diarrhea
  Salmonella
  Cholera
Heat stroke
Protracted vomiting
Excess intestinal suction
"Low salt syndrome" (excess diuretics, Na restriction)

Miscellaneous Causes

Paroxysmal myoglobinuria
Sucrose infusion
Bismuth
Phenurone
Electric shock

A complete discussion of renal physiology (an understanding of which is paramount to successful therapy) and therapy is beyond the scope of this paper; however, some of the more salient features will be mentioned.

Kidney failure may be divided into three distinct phases; the initial shock phase, the oliguric phase, and the terminal polyuric phase. (The shock phase is present only in those cases where renal blood supply is sharply impaired.)

During the shock phase treatment of the underlying cause is of the utmost importance to prevent further renal damage. When blood is lost from hemorrhage or trauma, the most desirable procedure is infusion of whole blood. When loss is by way of intestinal discharge, as in cholera, with bicarbonate loss relatively greater than chloride loss, adequate amounts of bicarbonate to the infused solutions accelerate the return of renal function. When dehydration is the cause of shock, saline infusions are indicated. In diabetic coma, there may be shock and anuria from desiccation complicated by acidosis. In addition to the bicarbonate loss, there may be a critical plasma deficit of potassium sufficient to cause respiratory paralysis, particularly after insulin has taken effect and glycogen storage has begun.

Immediate correction of the potassium deficit may be essential to recovery.

It is during the shock phase that many patients may be saved by prompt treatment. The reversible causes of acute renal failure are listed below: (after Merrill)

(A) Obstructive uropathy
(B) Acute pyelonephritis
(C) Circulatory insufficiency
  1. Water and electrolyte loss
  2. Whole blood or plasma loss
  3. Myocardial failure
  4. Vascular failure
(D) Nephrotoxins (bichloride of mercury, bismuth, sulfonamides)
(E) Intravascular hemolysis

OLIGURIC PHASE

The functional post-shock picture is one of continued tubular paralysis with diuria or oliguria where the small amount of dilute urine tends to approach plasma ultrafiltrate in urea and electrolyte concentration.

If the patient is seen for the first time while in the oliguric phase it may be difficult to determine whether there is merely dehydration or tubular necrosis. Some authors suggest "loading" the patient with an infusion of 1000 cc., 5 per cent glucose to see if output increases, however, we feel this to be a dangerous procedure and suggest the differential diagnosis be made by a careful history and clinical evaluation of the patient.

The mechanism of oliguria in acute renal failure is unknown although there are several postulated mechanisms. It is thought that there is: 1) tubular obstruction by casts formed from necrotic, cellular material which fills the lumen of the nephron distal to the site of tubule destruction, 2) non-specific back diffusion of virtually all of the glomerular filtrate because of tubular epithelial damage, 3) limitation of effective renal blood flow and glomerular filtration by a variety of possible mechanisms, and 4) combination of these first three.

Renal stresses in acute failure express themselves biochemically as susceptibility to overhydration, azotemia, hyponatremia, hypercalcemia, hyperphosphatemia with hypocalcemia, metabolic acidosis and anemia. When severely progressed, these changes can be clinically grouped under the term uremia. It was formerly thought that the elevated BUN (azotemia) was the cause of uremia but it is now known that the other associated factors are probably more important in producing uremia than the single azotemic factor.

Although the production of each one of these manifestations of renal stress is closely related to and even dependent upon the other manifestations, they will be dealt with separately.

FLUID BALANCE

Normally the invisible losses of fluid from the body of a 70 kg. patient will be on the range of 800-1,000 cc./day. This will obviously be modified by fever, humidity, temperature (environmental), vomiting, diarrhea, etc. The other salient features to be considered is the 100-200 cc. provided as endogenous body water by daily tissue catabolism of body tissue. Studies have also shown that in acute renal failure there is a shift of intracellular water to the extracellular compartment causing a marked increase of the plasma volume even when no exogenous fluid is abated. A commonly recommended criteria then for determining the amount of daily fluid infusion is the acceptable loss of 0.25-0.5 pounds body weight per day. This is usually accomplished by giving a maximum of 300-500 cc. daily.

AZOTEMIA

Nutrition of the patient must be maintained. Existing glycogen stores are known to be depleted in approximately 24 hours. The necessary calories must then come from fat and protein metabolism, unless oxogenous calories are supplied. Since it is known, also, that with protein catabolism, waste products of urea, phosphates, sulphates and organic acids are formed which can no longer be excreted by the kidney and which can contribute to body intoxication, and that carbohydrate exerts a protein sparing effect, it is most wise to supply the needed calories from this exogenous source. Use of over 100 gms. in divided doses over a 24-hour period probably has little value. Merrill has suggested that fructose has a greater protein sparing action than glucose. Since the sclerosing action of high glucose concentrations on the vessel wall is well known, infusion through a polyethylene catheter in the femoral vein is probably the choice route. Administration of heparin (25-50 mg./500 cc. fluid) has been suggested to aid in preventing thrombosis around the needle.

SODIUM

Usually plasma sodium concentrations are found to be low in the initial oliguric phase(due to shift of sodium to the intracellular compartment as well as to plasma dilution). Sodium should not be given to the patient unless there is known loss such as wound drainage, vomiting or diarrhea, and then only in calculated amounts. Fluid restriction will more safely control the hyponatremia than sodium administration, with possible cardiac failure (most common cause of death). Only in presence of chemical acidosis is it justified to administer sodium. Treatment of acidosis should be done on the basis of a diminished bicarbonate alone.

ACIDOSIS

Since more acids than alkali are normally formed in man, loss of tubular function will promptly place the patient in acidosis (following the loss of the bicarbonate reserve).

POTASSIUM

Potassium intoxication is the second most common cause of death in the oliguric phase. With the sodium shift to the intracellular position, potassium shifts to the extracellular compartment. Potassium levels are increased further with cellular breakdown (tissue catabolism and infection). The level of plasma K at which toxicity begins to manifest itself is not a constant point but rather is dependent upon other factors, (blood pH, plasma calcium level, and plasma sodium level). Since heart muscle is quite sensitive to plasma K levels, the cardiotoxicity of K is recorded on the EKG long before any other sign or symptom. However, plasma levels should be followed as well as the EKG changes for a truly accurate picture.

Probably the most effective method of controlling high potassium levels, employed with success, is the administration of glucose in water covered by insulin. Fifty to 100 gm. of dextrose to a 100-25 per cent solution, depending on the fluid requirements of the patient, covered with one unit of regular insulin for each 2 gm. of dextrose.

Other methods of control used are: 1) peritoneal lavage, 2) exchange transfusion, 3) ammonium containing resins, and 4) the artificial kidney. This last method probably remains the most effective. Once urinary output has reached 500 cc. daily, potassium excretion is usually adequate.

ANEMIA

Correction of the anemia usually present is best done by the careful administration of packed cells. Cardiac overload must be anticipated.

GENERAL MEASURES

Paraldehyde is the sedative of choice. Deep breathing, active and passive exercises should be routinely carried out to prevent stasis, thrombosis, atelectasis and respiratory infections.

The oliguric phase will usually last from 10-14 days.

DIURETIC PHASE

The patient must still be considered critical as extensive tubular defects still exist. Thus, the electrolyte picture must be followed carefully. The diuretic phase usually lasts 10-12 days.

VASCULAR DISEASES

The major vascular diseases that should be considered are 1) rupture of renal aneurysm, 2) arterial embolus or thrombosis, 3) hemorrhagic infarction with or without thrombosis of the renal vein, and 4) traumatic infarction.

Fortunately, renal aneurysm is rare. Developmental defects, arteriosclerosis, inflammation (including syphilis, tuberculosis and periarteritis, nodosa and trauma have all been linked with their formation.

Pain, located in the area of the kidney, tumor and hematuria, are the cardinal clinical manifestations. Occasionally a systolic bruit may be heard. Often calcific deposits will be seen on a roentgenogram. Once the diagnosis is made nephrectomy is the treatment of choice.

Arterial embolism is most commonly seen in the atherosclerotic patient with a history of a myocardial infarct. It has also been seen in patients with subacute bacterial endocarditis and polycythemia vera.

The outstanding symptom is sudden, severe, constant pain located in the flank and upper abdomen. Usually the pain will localize in the kidney area within 24 hours and will subside in 7-10 days. A transient hypertension may be seen. Associated with the pain will be a temperature elevation and a polymorphonuclear leukocytosis within 24 hours. The urine will reveal albumin and in some cases erythrocytes. Intravenous pyelograms and function tests will reveal diminished to absent function. Retrograde pyelograms will be essentially normal. Aortography will reveal blockage of the renal artery if attempted. The management of these cases is most often conservative.

In the presence of septic states or thrombophlebitis of the leg vein or vena cava a venous infarct may occur. These patients are seriously ill and run a septic course. Incomplete filling will be seen on the retrograde pyelogram. Usually the kidney will become huge and readily palpable. Examination of the urine will reveal erythrocytes. Nephrectomy is lifesaving.

This condition is occasionally seen in children, in the presence of infection. The course is similar to that seen in an adult. There will be an onset of fever, followed by vomiting, which will lead to dehydration, acidosis, and shock if uncontrolled. Nephrectomy is indicated.

The last vascular disease to be mentioned is the so-called traumatic infarct. This condition occurs in the presence of injury to the renal pedicle with resultant infarction. Clinically it will resemble other forms of trauma to the kidney (pain, mass, tenderness and often shock). A history of trauma will help make the diagnosis in the presence of the above symptoms associated with decreased kidney function and normal retrograde pyelogram. Unless there is severe injury with hemorrhage the indicated management is conservative.

In conclusion, the true urological emergency is one which requires careful, meticulous examination, including simple laboratory procedures. Special studies should be made by one experienced with their procedure and interpretation. Prompt diagnosis in all these cases is lifesaving. The incidence of chronic renal disease will be reduced. Multiplicity of operative procedures will be avoided. Continuation of discussions of urologic diseases and their impact on the general health of the individual is vital in order to preserve renal health.

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To do thy duty, whate'er its worth
Is better than life with love forever
And love is the sweetest thing on earth. —Roche

Clinical Evaluation of Antivert in Symptoms Associated With Meniere's Syndrome

O. G. SMITH, M.D.
Clarksdale, Miss.†

INTRODUCTION

THE SYMPTOMS most commonly referred to in Ménière's syndrome are tinnitus, vertigo, impaired hearing, nausea and occasional vomiting. This study is specifically concerned with the treatment of most of these symptoms. Patients with marked impairment of hearing were excluded from the study and referred to a specialist.

In the literature one finds postulated many possible causes for vertigo. Some of the more popular ones are brain lesions, eye disease, allergy, endocrine disturbances, particularly during menstrual and menopausal periods, trauma and vascular changes of the inner ear.

Therapeutic measures advocated for Ménière's syndrome even exceed the numerous causes[1]. Therapeutic reliability generally is inversely proportional to the sum of agents employed. Thus, final recourse to surgical methods in some cases attests to the inadequacy of many of these treatments. Vertigo accompanying Ménière's syndrome can be traced to a disturbance of the inner ear. A vasospasm of the blood vessels takes place in the cochlea, a closed space with circulation supplied by an end artery. Collateral circulation is to "spill over" to the neighboring vagal nuclei absent and the cochlea is temporarily deprived of its blood supply. The ensuing pressure on the labyrinth is probably responsible for the resulting tinnitus and vertigo[2].

Nausea and vomiting occur quite frequently with vertigo in association with ear disease. Hoople[3] explains the probable cause for the ancillary symptoms in the following manner: In the brain stem the centers for the labyrinthine function and the vagus nerve are adjacent. A strong stimulus from the ear may cause impulses to cause nausea or vomiting, depending on the magnitude of the overflowing impulses.

In recent years, certain antihistamines and vasodilators have been effective in controlling these symptoms[4]. However, the above compounds administered singly may often be ineffectual. Williams[5] has reported that a combination of selected agents from these two drug classes is therapeutically efficient in completely relieving or distinctly alleviating symptoms of Ménière-like quality. Reports of investigations have attributed particularly beneficial results to an oral combination of nicotinic acid and meclizine dihydrochloride[6]. This report is concerned with our findings in similar dosage-response trials with this combination.

CHEMISTRY

The chemistry of these two compounds is well known, but a brief account is given to substantiate the efficacy of such a combination. Meclizine dihydrochloride, a synthetic piperazine derivative, is the antihistaminic constituent of the formula. Structurally it is unique, in that it contains three benzylic rings rather than two as found in other closely related antihistamines[7]. Its action as an antiemetic is well documented[8,9,10,11], and believed to be a result of its blocking the nausea-vomiting reflexes either by directly inhibiting the emetic trigger zone in the pons or by depressing the labyrinthine apparatus or both[12]. Clinical experience demonstrates its comparatively low toxicity and prolonged duration of action, thus making it superior to comparable doses of other antihistamines in current use[13].

On the assumption that vertigo in Ménière's syndrome is due to endartery vasospasm, various vasodilators have been used. In this study, nicotinic acid was chosen more for its vasodilating properties than for its therapeutic value as a vitamin substance. Nicotinic acid has a proved vasodilating action on radicles of the external carotid arteries, and presumably also acts on the cochlear and vestibular branches[11]. Since Ménière's syndrome is a condition in which blood supply through these arteries to the ear has been impaired, it is plausible that nicotinic acid which dilates branches of the external carotid artery should relieve this situation.

PROCEDURE

Tablets* containing 12.5 mg. meclizine dihydrochloride and 50 mg. nicotinic acid were administered to 117 patients complaining of one or more of the symptoms associated with Ménière's syndrome. The patients ranged in age from 17 to 84 years. The dosage was individually adjusted but in most cases an average of 1 to 3 tablets daily proved to control effectively or relieve com-

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*Antivert, J. B. Roerig and Company (Div. Chas. Pfizer and Co., Inc.)

TABLE I

SYMPTOMS	No. Pts	Average Antivert Dosage	RESULTS			
			Excellent	Good	Poor	Unimproved
Tinnitus and Vertigo	87	1 to 3 Tabs. daily	65	12	4	6
Nausea and Vomiting	30	1 to 3 Tabs. daily	25	5	0	0
TOTALS	117		90	17	4	6

TABLE II

COMPARATIVE STUDY

SYMPTOMS	No. Pts.	Medication	RESULTS			
			Excellent	Good	Poor	Unimproved
Nausea and Vomiting—5 Tinnitus and Vertigo—3	8	A	4	4	0	0
Nausea and Vomiting—12 Tinnitus and Vertigo—3	15	B	2	5	8	0
Nausea and Vomiting—1 Tinnitus and Vertigo—2	3	C	0	2	1	0
TOTALS	26		6	11	9	0

TABLE III

COMPARISON OF RESULTS IN TABLES I AND II

PATIENTS	Excel-lent	Good	Poor	Unim-proved
Number (Group II)	6	11	9	0
Number (Group I)	90	17	4	6
Percentage (Group I)	77%	15%	3%	5%
Percentage (Group II)	23.1%	42.3%	34.6%	9%

pletely the presenting symptoms. Of the 117 patients, 90 (77 per cent) reported excellent results (Table I). They experienced complete relief within a day or two of initiating therapy. Eighteen (15 per cent) have been classified as having good results, i.e., complete relief of one symptom and a lessening of the others or complete relief over a longer period of time. Poor results were observed in four patients (3 per cent) and only six (5 per cent) did not respond to the medication. Of those unimproved, one patient was a diabetic, another was anemic and received hematinics adjunctively, and one patient was diagnosed as having a mental disorder. Several patients complained of non-specific headaches which were markedly relieved in almost all cases. In no instance were any undesirable side effects noted by either the managing physician or the patient.

A comparative group of 26 patients received three different medications in place of the meclizine-nicotinic acid combination. Eight received a parenteral preparation of thiamine hydrochloride and pyridoxine (Preparation A), 50 to 100 mg. once or twice weekly. The results obtained with this drug were quite satisfactory; four good and four excellent, however, the mode of therapy was unfavorable. There was excessive pain on injection which could not be prevented even when procaine was added to the solution.

Only fair results were obtained with a compound consisting of sodium bromide, pyridoxine, chloral hydrate, pepsin, menthol and aromatics (Preparation B). Of the 15 patients receiving this preparation, more than half reported poor results and only two patients were completely relieved. This drug is administered orally in dram doses on crushed ice. It has a very unpleasant taste and drowsiness has been observed as an accompanying side effect.

The remaining three patients in this group received an oral dimenhydrinate preparation (C) four times a day. It was found to be of little benefit, no excellent results, two good responses and one poor. Table II summarizes the results of this comparative series while Table III contrasts the results of both groups.

Although the comparative study was relatively small, it was felt that the similarity of the cases selected constituted a valid basis for comparison. Combining the results of responses to the three control medications, 65.4 per cent of the patients were benefited. With the meclizine-nicotinic acid combination, 92 per cent showed good to excellent responses. Moreover, the control medications were deemed inferior because of the localized pain with the parenteral therapy, the unpleasant taste of the oral medication and accompanying drowsiness in some cases.

SUMMARY

A combination of nicotinic acid and meclizine dihydrochloride was administered to 117 patients complaining of various symptoms associated with Ménière's syndrome. Of this number, 90 patients experienced complete relief within a day or two of initiating therapy, 17 were relieved of one

symptom or completely relieved over a longer period, 4 reported very slight improvement and 6 were unaffected by the medication. Benefit was achieved in 92 per cent of the patients. No significant side effects were reported either objectively or subjectively. As a comparison, 26 additional patients complaining of the same symptoms were given three different preparations. In this series the percentage of patients obtaining relief was considerably lower (65.4 per cent). In addition, soporific and other undesirable qualities showed these drugs to be therapeutically unfavorable. In view of the large percentage of patients obtaining complete or partial relief, the combination of nicotinic acid and meclizine dihydrochloride appears to be a safe and reliable therapeutic measure in vertiginous states, related nausea and vomiting, and headaches.

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I Have A Lady, Doctor

D. J. GERACI, M. D.
Gulfport, Miss.

This article is especially written for those luckless women who occasionally find it necessary to require the services of a physician. It is a partial infringement on the rights of Emily Post, in that it is intended to deal with certain rules of etiquette; to act as a guide as to how a female patient should conduct herself during the sometimes trying visits to her doctor for advice and treatment.

If it so happens that you find it necessary to face the "ordeal" of seeking medical aid, please have some consideration for your physician because your visit may turn out to be an "ordeal" for him as well.

If your doctor sees patients by appointment only, try by all means to be prompt, remembering that he has many others to care for after your case is disposed of. If he "takes them as they come" and you find that you have to wait an hour or so before you are admitted to his office, please know that while you are waiting, he is only trying to help another who may need attention as much as or more so than you. After all, the doctor who spends considerable time with his patients is one worth waiting for, because he does not believe in "assembly-line" procedures; and patience on your part will ultimately reap dividends for you.

At long last when you are seated in his consultation room and are permitted to tell all about your symptoms and complaints, try to be factual. Try not to deviate too far from the causes which prompted you to seek help. Remember that he is not interested in your opinion as to whether or not Mrs. O'Leary's cow was responsible for the great Chicago fire, nor does he care to hear that Lydia Pinkham's Compound has cured your fourth cousin of a most strange ailment which her chiropractor was unable to remedy after two years of treatment. Your doctor only wants to know about *you,* and he has to before he can intelligently advise and treat you.

When he begins to ask questions which you think have no relationship whatsoever to your illness, please do not become irritated, for he has sound reasons for sometimes acting like Professor Quiz. Very often a seemingly insignificant question and its answer will give him a valuable lead or clue in determining the cause of your ailment.

Again, when he asks about the physical status of your parents, brothers and sisters, or when he delves into your past medical history, try to remember that he is not the author of the gossip column of your local newspaper, but only a conscientious doctor in search of information which may help him to find a basis for your complaints. Remember also, that whatever transpires between you and the doctor is always kept *strictly* confidential.

When he is ready to examine you and summons his nurse to prepare you properly for such, please do not offend him by saying, "Oh, doctor, I don't think it is necessary to put me on the table; old doctor so-and-so used to just take my blood pressure and listen to my chest right here" (then demonstrate by exposing two inches of your chest wall just below the neck-line). If he is a conscientious and thorough physician, you should be thankful in that you have found one who really wants to give you a complete "going-over". If your story (or history as it is called) makes him feel that you do need a complete examination, don't be embarrassed when his nurse dresses you in your "birthday clothing"; after all, you will be properly draped and she will be standing by your side all during the procedure.

When the doctor examines your chest and other parts of your anatomy which may cause you to blush, remember that he is only searching for evidence of disease or maybe trying to detect early signs of cancer; that is just an ordinary and routine procedure for him with no eroticism involved. If you are somewhat flat-chested and find it necessary to use "props" in order to bolster your morale as well as your figure, do not be embarrassed, for the doctor, above all others, understands the situation quite well.

Most important, when you visit your doctor please dress for the occasion. Don't wear a gown which has countless clips or buttons that will require considerable time to unfasten. Remember that cumbersome corsets and triple petticoats are only hindrances and time wasters, and the old-fashioned whalebone corset of Grandma's day is strictly a headache to the modern busy practitioner.

I can recall an elderly lady patient (let's refer to her as Mrs. Smith) who many years ago came to my office for a physical examination. I spent about one hour taking her history and when the time came for the examination, it required about twenty minutes or so to remove her corset and another half hour to complete the examination; prior to the examination she was asked to walk a few steps away to the ladies' rest room in order to obtain a specimen of urine for analysis. When she failed to return after an hour had passed, I became quite anxious about her, thinking that possible gaseous fumes in the rest room had caused Mrs. Smith to lose consciousness; my nurse was then sent to the ladies' sanctuary only to find that my dear patient was doing very well and had managed to reach the final chapter of *Gone With the Wind.*

I saw Mrs. Smith at regular intervals for quite some time after this preliminary check-up, but whenever her appointment hour was due I would always have sufficient time to go next door for a shave and a haircut; in fact, it became a habit with me to time Mrs. Smith's appointment in order to visit with my barber. On one occasion I even had time to walk two blocks away from the office to be fitted for a suit, returning leisurely in time to hear my nurse say, "Doctor, we are now ready for Mrs. Smith." This dear lady has long since departed this world, having been struck down by an automobile while crossing our main street during one of her "leisure moments." I will always remember her; in fact, I observe "Mrs. Smith's Day" every year. She influenced my life tremendously in that I learned much from her of the beneficial effects of relaxation.

Considering the other extreme in regard to the physical examination, the doctor does not expect his patient to be as fast as the artist's model; that is, one zip and bingo, she is ready and as well dressed as Lady Godiva without her horse. Such a patient frequently embarrasses the doctor and his assistant; fortunately, I do not encounter many of this type.

Summarizing briefly some of the rules of medical etiquette for the female patient, we suggest: First of all, be prompt in keeping your appointment. Next, do not hesitate to answer questions your doctor may ask, even though they may be very often rather personal ones. Again, be practical in your choice of dress so that you may save his valuable time (remember Mrs. Smith). Finally, submit to whatever examinations your doctor deems necessary, bearing in mind that such procedures are solely for your welfare and not his.

Such a routine will allow more time for informal discussion after the history and physical examination are completed. These "fireside chats" will help your physician to know you more as a person and will also foster a better doctor-patient relationship. Such a procedure will also help you to know your doctor more intimately and very often sows the seeds of confidence and faith, factors which many many times spell the difference between the success and failure in the management of an ill person.

Medical Center Miscellany

CARDIOVASCULAR SEMINAR

Dr. Robert W. Wilkins of Boston, past-president of the American Heart Association, is one of the five distinguished physician-scientists who will lecture during the sixth annual Cardiovascular Seminar to be held at the University Medical Center April 1 through 3.

The seminar is sponsored, as always, by the Mississippi Heart Association.

Other guest lecturers are to be Dr. C. Rollins Hanlon, professor of surgery and director of the department at St. Louis University School of Medicine; Dr. Richard Gorlin, associate in medicine at Harvard University School of Medicine, Dr. George Meneely, associate professor of medicine at Vanderbilt and Dr. Dan G. McNamar, assistant professor of pediatrics at Baylor.

Dr. Meneely will open the program at 9:00 a.m. Wednesday, April 1, with a paper on pulmonary function testing. He'll speak that afternoon on cardiopulmonary correlations and will discuss sodium chloride toxicity and high blood pressure on Friday afternoon.

Dr. Wilkins' first lecture, at 10:30 a.m. April 1, will deal with diagnostic and prognostic studies in hypertension. His second will cover drugs in the treatment of hypertension and his final talk, at 3:45 p.m. on Friday, is to be on recent developments in the physiology and therapy of congestive heart failure.

Dr. Gorlin's topics are to be the pathologic physiology of angina pectoris, clinical and physiological principles underlying the selection of patients for aortic valve surgery and the value and limitations of physical signs in the clinical assessment of cardiac patients.

Dr. McNamara will discuss characteristics of innocent heart murmurs in children, classifications of ventricular septal defects based on physiological data and clinical aspects. He will report on results of surgery for congenital heart disease in 140 infants under one-year of age.

Dr. Hanlon will speak on Thursday and Friday only, when he will go into pre- and post-operative management of open heart patients, techniques and complications in open heart operations with cardiopulmonary bypass, and physiological changes after various operations for Tetralogy of Fallot.

The Mississippi Academy of General Practice will grant 20 hours of Category I credit for attendance at the course. The registration fee is $10. Programs and registration forms will be sent to all state physicians.

Create Department

A separate Department of Clinical Laboratory Science was created by the Board of Trustees in January. Dr. Warren N. Bell is its chairman and also retains his appointment as an associate professor in the Department of Medicine. The new department includes the division of medical technology and clinical laboratory diagnosis, formerly a part of the Department of Medicine.

New Pathologist

Dr. Catherine C. Goetz joined the medical school faculty on February 1 as an associate professor of pathology. She had been in practice in Natchez since 1955.

Dr. Goetz is current president of the Mississippi Association of Pathologists. She is a diplomate of the American Board of Pathologists, a member of the American College of Pathologists and the American Society of Clinical Pathologists.

The new faculty member graduated from Loyola University with a B.S. in medical technology. She received her M.S. in parasitology from Tulane in 1944 and her M.D. from Louisiana State University in 1950.

Dr. Goetz interned and took her first year's residency at Hotel Dieu in New Orleans. She completed her specialty training at LSU and Charity hospitals in New Orleans.

She is married to William Gill of Jackson.

Sigma Xi Club

The University of Mississippi Medical Center Sigma Xi Club was chartered at a dinner meeting in the Medical Center, February 16.

Dr. Charles C. Randall, professor of microbiology, is the club's president and Dr. Emmett Johnson, assistant professor of microbiology is secretary-treasurer.

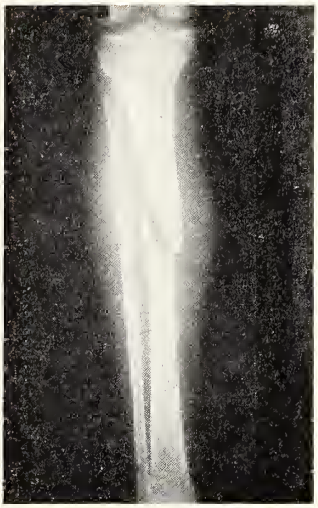
Sigma Xi members from the medical school, Belhaven and Millsaps attended the charter dinner when Dr. William C. Holland, UMC professor of pharmacology, was the speaker.

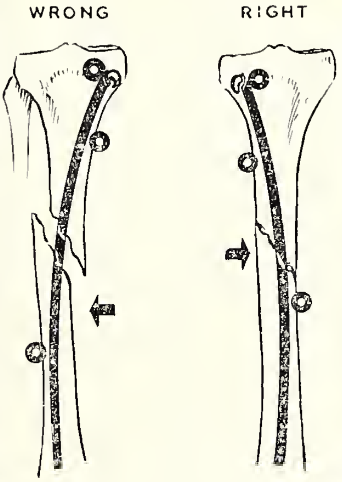
Fracture Problems

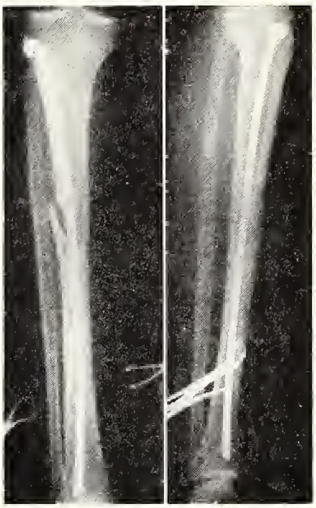
Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 25 of a Series

Oblique Fractures in Short Fragments





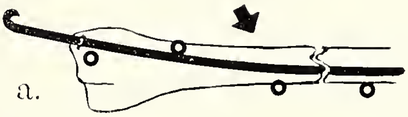


In this oblique fracture, excellent fixation and compression resulted because a curved one-fourth-inch pin was introduced through the lateral condyle. Had it been introduced from the medial condyle, distraction would have occurred.

RADIUS

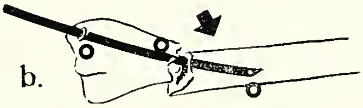
Direction of Fracture Line

a.



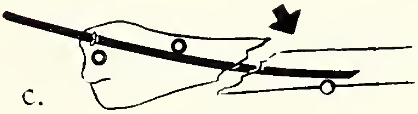
In a long fragment,
this happens.

b.



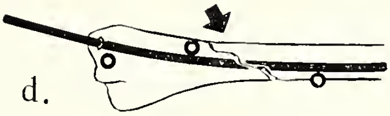
In a short fragment,
this happens.

c.



Distraction

d.



Compression

In (b) and (c) the direction of insertion of the pin should be changed to an axial one. It all depends on the direction of the fracture line, so, we have a rule:

IN AN OBLIQUE FRACTURE OF A SHORT FRAGMENT, THE AXIS OF THE PIN SHOULD BE IN THE SAME GENERAL DIRECTION AS THE FRACTURE LINE.

THE RULE

The rule is easy to remember if you note that in (c) the axis of the pin crosses the axis of the fracture line to make an "X". In (d), the axial lines cross to make a "V" (for victory).

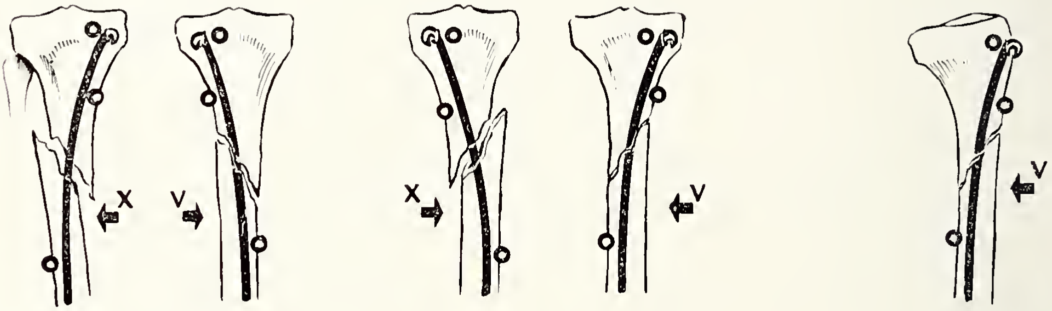
Formula:

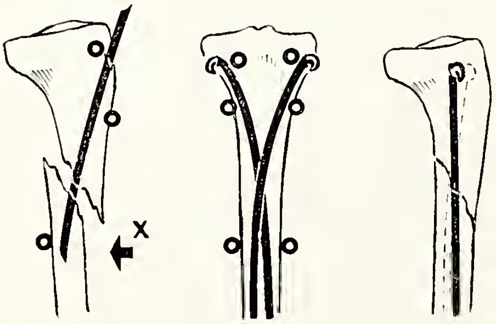
V (victory) — Good Compression

X (no good) — Distraction

This principle applies in all the long bones of the body. In the upper tibia the problem is simplest because the pin can be inserted from the front or side of either condyle.

TIBIA

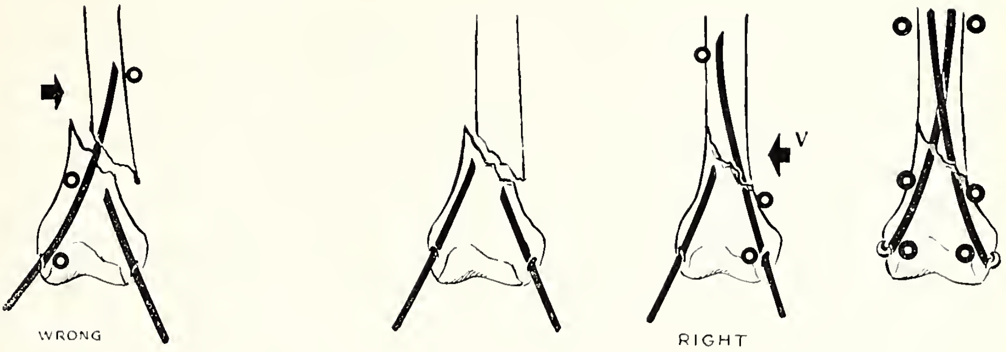




In the oblique fracture shown at the left, this principle can not be applied. Theoretically it would be necessary to apply the pin from the back of the tibial condyles.

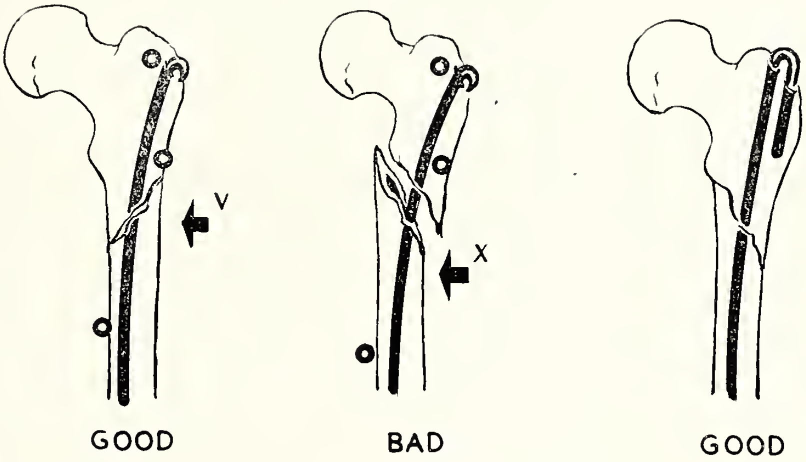
Here it is necessary to use double pins.

LOWER FEMUR



In other areas, we do not have this wide choice of procedures. In the lower femur, pins must enter the sides of the condyles. Double pins are used, but the most effective pin should precede its fellow into the shaft and care should be taken in stress-relieving the head that compression is not lost.

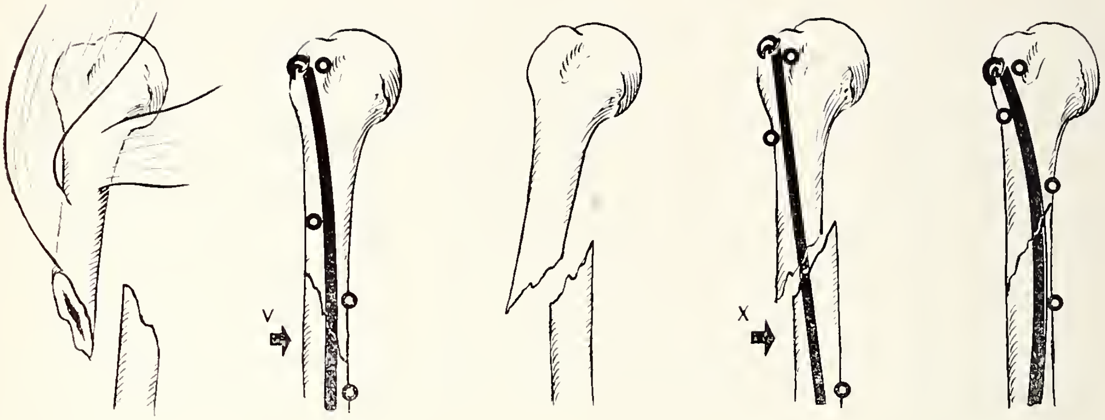
UPPER FEMUR



The direction of the oblique fracture line is most important. In the fracture (right) the special type femur pin with the long hooked head performs admirably. Note that it is inserted from above rather than the side of the trochanter and the hook is driven deeply into the trochanter. Firm fixation is secured with control of rotation.

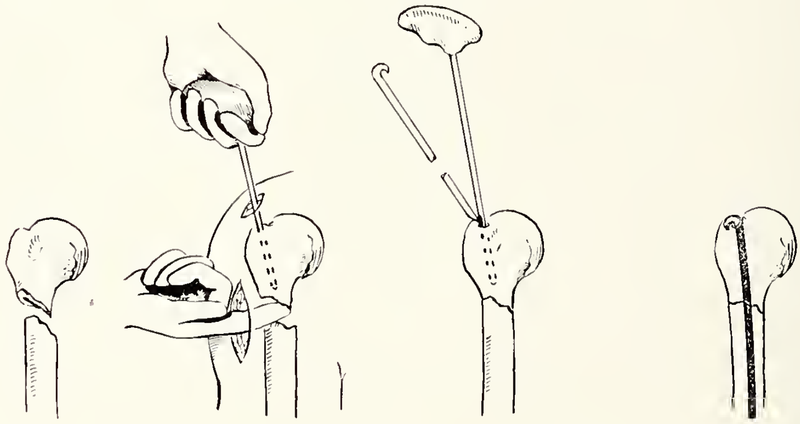
HUMERUS

BELOW DELTOID



Good healing here is dependent upon precise handling. In the fracture at the right use a curved one-fourth-inch pin if the medullary canal is large enough to accept it. Note difference in directions of the fracture lines.

UPPER THIRD



Pin introduced from the top to avoid angulation. Reamer may be passed retrograde. Use reamer as grooved director to insert point of the pin.

SYMPOSIUM ON PSYCHOSOMATIC OB-GYN

The first Symposium on Psychosomatic Obstetrics and Gynecology will be held at the University Medical Center on March 4.

"Emotional reactions have long been recognized as complicating factors in medical practice. This symposium will cover practical methods of dealing with emotional complications in women with obstetrical and gynecological problems. We hope you will find it of interest," urges Dean D. S. Pankratz.

In addition to the papers to be presented by outstanding guest lecturers, the program will provide generous time for discussion and questions.

Guest lecturers will be Dr. James H. Ferguson, University of Miami School of Medicine, Dr. Harry Fields, University of Pennsylvania School of Medicine, and Dr. P. J. Sparer, University of Tennessee School of Medicine. The University of Mississippi School of Medicine OB-GYN faculty members cooperating are Drs. Lockard, Newton, Simmons, and Sutherland, and Dr. Floy J. Moore is professor of psychiatry.

DR. HEARD TO HEAD SCABB

The first annual meeting of the South Central Association of Blood Banks was held in Austin, Texas, February 6 and 7, 1959, at the Driskill Hotel.

The South Central Association of Blood Banks, formerly the Texas Association of Blood Banks, at annual meeting in New Orleans last year was voted to enlarge the scope of the Association to include the states of Arkansas, Louisiana, Mississippi, New Mexico, and Oklahoma.

Of interest to Mississippians was the election of Dr. Kenneth Heard of the Mississippi Baptist Hospital, Jackson, as president-elect. Dr. C. B. Mitchell of Meridian was elected to the board of directors.

The 1960 annual meeting will be in Albuquerque, New Mexico.

Generally speaking, every gallbladder that has stones should be removed. —Alton Ochsner.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
Harvey F. Garrison, Jr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

SALT METABOLISM AND HYPERTENSION

John E. Weller, M.D., F.A.C.P., and
Sibley W. Hoobler, M.D., F.A.C.P.
Ann Arbor, Michigan

Annals of Internal Medicine, Vol. 50, Page 106

This article begins by stating that sodium chloride metabolism in essential hypertension is abnormal in that these patients have a slightly elevated serum sodium concentration, expanded total body sodium content and increased amounts of sodium in water in their arterial walls. Recognizing the effects of sodium depletion, the authors state that chlorothiazide (diuril), a potent naturetic agent, may exert its anti-hypertensive effect on both hypertensive animals and patients by virtue of its sodium-depleting effect. This drug seems to potentiate the effect of other antihypertensive routines; they have combined the administration of it with the ganglionic blocking drugs and it definitely reduces the requirement for the latter in the treatment of hypertension. Sympathectomized patients are unusually responsive to the blood pressure lowering effect of chlorithiazide.

This increased renal tubular rejection of sodium, chloride and water in response to salt loading, which is present in essential hypertension, is felt to be the result of the elevated pressure and not its cause. There is no evidence that water excretion occurring in excess of sodium excretion causes a "relative retention" of sodium in the majority of hypertensive patients.

Their hypothesis based on these facts and findings may be summed up in the following words: In some cases of essential hypertension, the sodium content of certain compartments or tissues, possibly including vascular smooth muscles, may be increased. This may or may not be sufficient to elevate the total body sodium but it is reflected in the slight elevation of the sodium level of some hypertensive individuals. If there is a greater sodium and water content of the vascular smooth muscles in the hypertensive patient, this may be associated directly or indirectly with an increase in total peripheral resistance. The ability of diuril when used alone to reduce the blood pressure with some hypertensive patients is perhaps the result of this sodium-depleting effect. This might explain its antihypertensive effect in those cases where no reduction in extracellular fluid volume has occurred.

Comment: This hypothesis certainly explains in some fashion the fact that hypertensive patients eliminate a greater urine volume and actually excrete more sodium chloride than do normotensive subjects. Only by virtue of selective deposition of sodium chloride in the vascular smooth muscle of the hypertensive patient could its loss produce such striking effects in the absence of a reduction of extracellular fluid volume when a patient is treated with these salt depleting agents. Biopsy and tissue analysis studies have shown that the smooth muscles of the vascular walls in hypertensives definitely do contain more sodium. At least, the fundamental facts are present for the development of such a hypothesis.

PEDIATRICS

The Incidence of Low Serum Levels of Gamma Globulin in Diseases Occurring During Infancy and Childhood... J. William Oberman, Krikor O. Gregory, Sydney Ross, Frederick G. Burke, and E. Clarence Rice. In: *Antibiotics Annual*, 1957-1958, New York, Medical Encyclopedia, Inc., 1958.

It is known that the serum levels of gamma globulin are usually low: 1) in the first six months of life (the period of physiological hypogammaglobulinemia of infancy) when the infant, after exhaustion of maternal stores transmitted across the placenta, is unable to synthesize gamma globulin as adequately as the older child or adult; 2) during the course of any disease in which there is impaired production or increased loss of serum proteins with resultant low levels of the gamma fraction, as in nutritional hypoproteinemia, the nephrotic syndrome, and chronic liver disease; and 3) in the relatively rare congenital or acquired hypogammaglobulinemia. Normally at birth the serum level of gamma globulin does not differ significantly from that of the pregnant mother at term or that of the normal adult. It falls gradually to reach lowest mean levels at 3 to 4 months of age (0.50 gm./100 ml.), and then rises slowly to the approximate mean adult level (1.20 gm./100 ml.) between 3 and 5 years of age. Any time after 7 months of age, however, the serum level of a child may be at the adult range. Serum specimens were collected during the first week of illness from 239 infants and children with acute bacterial and viral infections, rheumatic fever, acute glomerulonephritis, and nephrosis, and from an additional group of 78 infants and children with histories of repeatedly occurring infections. In 7.1 per cent, the serum gamma globulin values were below the normal range for age. The majority of children with low values had either lipoid nephrosis or were under 7 months of age. In 4 older children, the diagnoses were bronchopneumonia with complete recovery, mumps meningitis with complete recovery, bacterial meningitis with severe neurological residua, and meningococcemia with death. Among the 78 infants and children subject to repeated infections, 23 per cent had serum levels of gamma globulin below normal range for age. However, it was not possible to differentiate by clinical or laboratory means those children with low serum levels of gamma globulin from those with normal or high levels.

Comment: When infants and children between the ages of four months and five years have repeated or serious infections, the possibility of hypogammaglobulinemia should be thought of and tested for.

YOUR SAMPLES, DOCTOR

We are sure our doctors are interested in the Old Ladies Home at Jackson. The following from Mrs. Gilfoy, whose fine work was recognized at the Baptist Hospital across the years, describes a need we can fill:

> I am writing you as a member of the Old Ladies' Home Board and at the suggestion of Dr. William Lotterhos, our physician for the Home.
> As you understand, the Home is operated by a group of twenty-five women, who give of their time and talent free of charge to direct the affairs of the Home. We now have 95 old ladies from almost every county in the state, who enjoy the privileges of the home and are well cared for. They range in age from 70 to 96 years of age.
>
> Our drug bill increases every month and we are trying every way possible to seek means of reducing it. Dr. Lotterhos suggested that if we would write you, he feels sure you would be glad to insert an ad or request to the doctors over the state, asking if they would not be willing to send us some of the vitamins or free samples that drug salesmen give them. Just mail to the Old Ladies Home, Jackson.
>
> Trust you are well and enjoying your work. I miss seeing my doctor friends since I am no longer at the Hospital.
>
> Sincerely,
> Karenza Gilfoy,

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

CANCER DETECTION

(Guest Editorial)

In 1928, Dr. Papanicolau first reported on the possibility of detecting uterine cancer through the study of desquamated cells.

Serious attention was not given to this study until 1943, and at present it is a recognized, essential, cancer detection method, not only for uterine excretions but for secretions and excretions from other body orifices.

Mississippi has gained international recognition for work done in the elimination of certain parasitic and infectious diseases. Let us not fall behind in the problem of early detection and treatment of cancer, for we realize that uterine cancer is almost always curable if discovered early enough.

At the recent meeting of your Cancer Control Committee, most consideration was given to the activities discussed by the Cytology Coordinating Committee organized during late 1957. This composite committee was organized to make full use of cytological smears in the detection of uterine cancer.

Statement as to the purpose of this committee was presented to and approved by the House of Delegates.

A pilot program was organized and the Central Cytology Laboratory has been opened in Jackson.

The Mississippi pathologists have cooperated, in agreeing to examine smears on genuinely indigent patients without charge, and such smears should be so labeled.

The Mississippi Division, American Cancer Society, has funds for the training of cyto screeners. One has already had the required six months training, and another is being trained, at the Institute of Pathology, University of Tennessee, School of Medicine.

For such training it is necessary for the applicant to have two years of college, to be sponsored and supervised by a pathologist, and to remain in the state, engaged in such work for at least one year.

Since the Mississippi Division has funds for training such technicians, it is felt wise to keep at least one in training at all times. By this means, these people will be available as needed or requested in other locations in the state.

The chief concern of the Committee, stated in 1958, was a suitable method of publicizing this service to both lay and professional groups.

The recent cancer seminar conducted at the University of Mississippi School of Medicine was considered successful.

Application has been made for a scientific exhibit on cytology at the 91st Annual Session of the Association.

The Mississippi Division, American Cancer Society proposes to conduct a public education campaign. Contacts will be made with local physicians prior to the showing of an educational film.

It is very desirable that the local physicians give

By W. L. Stallworth, M. D., Columbus, Mississippi.

as much publicity to the program as possible and to cooperate fully.

The film, "Time and Two Women", produced by the American Cancer Society, was shown by the Executive Secretary. This is a 16 mm. sound film, in color, intended for use in public education on the value of cervical and vaginal smears as a diagnostic procedure.

It deals with a most serious and intimate subject, with clarity and good taste. The film is one that both men and women should see, and can be shown with discretion to mixed groups.

The film is heartily endorsed by the committee.

With the program as planned you may be sure that the requests for such examinations will become much more numerous and the need much better understood by the patient.

It is such a simple procedure on the doctor's part. There is very little added to the usual pelvic examination, except aspirating fluid from the vaginal fornix, scraping the cervical os with half of a tongue blade, smearing each on a separate slide, fixing the smear in equal parts 95 percent alcohol and ether.

As we well know this does not obviate the necessity of a careful history and physical examination, along with biopsy of suspicious lesions, but aids us to detect cancer even before there are actual symptoms or physical findings.

To be impressed with the need for such, one only needs to study the results of such screenings as done in Memphis and Shelby County, Tennessee, on 70,000 women, or the analysis of 1,000 women having hysterectomies for benign gynecological or obstetrical reasons, in which pathological study revealed fifteen cases of unsuspected carcinoma of the cervix and corpus uteri.

SALE OF FIREWORKS

(*Guest Editorial*)

Each Christmas season our Mississippi newspapers continue to report tragedies resulting from the use of fireworks. An 11-year-old boy from Boyle had an eye removed. An 11-year-old boy from Tupelo lost vision in one eye when a cherry bomb exploded in his face. Numerous severe injuries to ears and hands go unreported.

One cannot help but wonder how long we shall wait until the Mississippi public becomes aroused about this public health problem. Several facts should be generally known.

FACT 1: There are only about 8 or 10 states (all in the South) which permit sale or use of fireworks. Maiming of eyes, ears, hands, etc., is unknown in the East, Midwest, and Far West where no fireworks are allowed.

FACT 2: Most of the fireworks manufacturers operate out of state—Delaware, Ohio, etc.—where they cannot sell their products!

FACT 3: Large sums of money are expended by the fireworks lobby in each of the legislatures of these states whenever a bill is brought up to abolish use of fireworks. It is likely that our last bill in the legislature died from such a cause.

What can the physicians of Mississippi do about this problem? Following are suggestions:

Have a poll of every physician in Mississippi about this time of year, asking each one to indicate on a questionnaire how many severe injuries have been treated—eye, ear, hand, and other types. Have questionnaire returned to State Medical Association office for tabulation and newspaper publicity.

Approach all state senators and representatives to find out their position on this question.

It would be well to do this before our August primaries. Who is better qualified to talk to a senator or representative than his own family physician?

Elicit cooperation from various civic groups, such as P-TA, civic clubs, etc.—the Lions especially, for sight conservation is one of their projects.

It seems peculiarly inappropriate that we should celebrate the birthday of "The Prince of Peace" by a constant cannonading, resulting in disturbance of rest for hospital patients, invalids, older people, etc., and in the maiming for life of many of our children. What price a child's eye?

FOCUSING ON EDDIES

The national magazine, *Look*, peeped in on five hospitals in one state, and then made an observation to cover 5,640 great institutions in an entire nation. This is about equivalent to making a physical examination and diagnosis of a patient with all the person entirely covered except one little toe. If doctors should make as poor diagnosis of their sick patients as this reported status of our hospitals, the march of medicine would certainly come to a standstill and go in reverse soon thereafter. The hospital is a facility through which medical service may be utilized. Its tremendous expansion in service is tremendously costly; likewise, the astounding number of automobiles our nation utilizes is costly, but instead of breaking our people it helps to make them. The nation is buying more and more medical service and it is making it pay. The public is demanding the best, and largely it has to be secured through the hospital. Doctors, nurses, and hospitals are essential in the application of this medical service. What organization on the earth can claim more service to human beings for the return, than our hospitals?

It is too bad for a national magazine to mistake the eddies in medical service for the main stream.

YOUR HOSPITAL SHOULD BE DEDICATED

(*Guest Editorial*)

Many material and psychological requirements go into making a good hospital. It is elementary to mention the modern equipment and building that is mandatory in order for a hospital to be called good. We can find exact written specifications many places for these material achievements.

It is the psychological values that are hard to define and impossible exactly to measure. If it is to be truthfully said that we have a good hospital, there must be present many intangible qualities. The values that cause patients to feel they are in a congenial, helpful, friendly environment are indispensable and are the results of purposeful planning. A hospital that fails to provide these is falling far short of its duty regardless of the millions of dollars that may be invested in the physical facilities. *A well man cannot live by bread alone.* It follows that fulfillment of patient care only be partially achieved with physical needs.

According to medical statistics, psychosomatic conditions are more frequently seen by the physicians of this country than real physical ailments in people who consider themselves to have a deviation from good health. Then it must be that a great portion of therapeutic effort must apply to the psychological and spiritual makeup of man. If this is true, the responsibility to meet this need in patients who put themselves in our care falls upon every person who is in any way connected with their well being while they are hospitalized.

In an organization so complex as a modern hospital, whom shall we look to for leadership in creating these mandatory intangibles? Let us give consideration to the person who is responsible for coordinating all of the diverse groups and forces to a common goal of good patient care. He, of course, is the hospital administrator. He rightfully bears a lion's share of responsibility in bringing about an environment which can also meet the psychological and spiritual needs of the patients we admit to our hospitals.

We wish we could precisely describe how the hospital administrator should conduct himself and what he should be to reach such a goal.

We will begin our consideration by saying that there is need for only well integrated personalities assisting with patient care. We must be able to treat with humor or patience the sick person's tyranny or perversity. Our emotional makeup must be capable of fluctuating with the needs of the people we come in contact with. We must be endowed with a set of attitudes that enables us to respond effectively to any set of circumstances before us. If we are to come near the mark of what is required, vision, courage, honesty, integrity, humility, and other such virtues must be fundamental to our daily life. Proper timing in displaying these requisites of personality is most important. We must be and do all of this and much more to deserve to be in a position of responsibility to serve the sick. It is apparent that a human being with all of his efforts will fall short of the ideal. We recognize the need of a Power outside us. We will constantly strive to align ourselves with the supreme Power and recognize that it is only there that sufficient wisdom may come to make us come close to what we really should be.

Are we accepting the responsibility of leadership on this facet of our life? Are we worthy of the confidence that is placed in us? Will it rightfully be said of us that we went around doing good? If so, we must fully dedicate ourselves to hospital administration on its highest level.

The governing body of the hospital is usually made up of a group of dedicated citizens. They must be extremely careful to exercise their powers in a constructive direction. Selfishness or greed on the part of any board member may show up in patient care. It should be remembered that politics and patient care do not mix well. In their official actions concerning the hospital and its policies a spirit of dedication to do good should permeate every idea and decision. If the institution is to be completely dedicated to treating the sick and injured, every board member must possess this worthy attitude and dedication.

Certainly a spirit of dedication must prevail in every medical staff member. Not only should a physician have the patient but the best interest of the hospital foremost. In these days of team care for the sick person a much broader scope of action is necessary for effective results. When a physician is admitted to a medical staff he in effect agrees not only to the virtue of his own actions but to strive conscientiously for the betterment of the system as a whole. Group action and responsibility is not so clearly demonstrated in our society as in modern care for the sick. We truly must have a spirit of being our brother's keeper. The physician who allows professional jealousy or prejudice cause

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By E. L. King, administrator of Northeast Mississippi Hospital, Booneville, Mississippi.

him destructively to criticize the big team of which he is a member is in need of self-evaluation. The medical staff member must be dedicated not only to being a physician but to doing his part for the hospital in helping to create the helpful, friendly, congenial environment he knows to be necessary for his patients. The hospital cannot be fully dedicated unless each medical staff member shall fill his slot solidly and completely.

The employees of the hospital must possess complete devotion to duty for ultimate dedication for the hospital. With careful selection and proper leadership they will gladly close ranks in the interest of a completely dedicated institution. Many techniques are at our disposal to achieve this goal. The acute need for dedication does not lie with this group but in the administrator, the board of trustees, and the medical staff. They are looking to us for a satisfactory pattern of behavior to give our hospitals complete dedication.

The public as a whole has a degree of responsibility if our hospitals are to be completely dedicated. There may be a few citizens who sin against the hospital by unjust criticism or conduct. The more fanatical ones may even succeed in hurting patient care. This is the rare exception and the public as a whole looks to the administrator, the board of trustees and the medical staff for the best in patient care.

Let us recognize that we are indeed fortunate to have been allowed to hold the positions of responsibility for the care of the sick and renew our dedication individually. It is from this that comes our collective dedication that makes it possible to have completely dedicated hospitals. Until this ultimate is reached there is need for constant effort toward improvement. We need completely dedicated hospitals.

STILL AN AFFLICTION

A large insurance company wrote us: "The claim of Mrs. M. W. indicates that she was treated five days in the hospital for a carbuncle of the nose. Five days seem a long stay for this ailment. Did not other complications contribute?"

Reply: "No complications; just carbuncle of the nose. Although a case such as Jobe of Bible times suffered—boils for many months—would be unlikely in our day of antibiotics, patients have spent several weeks in bed with a carbuncle. Carbuncle of the nose is one of the worst. It is only through the blessings of the miracle drugs that we get a patient out in five days.

Count yourself fortunate that you have not had a carbuncle of the nose. If you had, you surely would not have questioned the five-day hospitalization."

MID-SOUTH MEETING TOPS

The Mid-South Postgraduate Medical Assembly presented a fine program at its annual session in Memphis, February 10-14. The attendance of doctors exceeded the 1958 attendance. The program was mighty good. Such able men as Drs. Philip Thorek of Chicago and Alton Ochsner of New Orleans warrant a good response. A number of essayists for their first appearance were very outstanding.

Alvin B. Hayles from the Mayo Foundation was one of the able essayists at the Mid-South. He is a pediatrician, native of Alabama. His papers were fine and you may expect one in the near future.

Dr. William D. Davis, of the Ochsner Clinic and a native of Mississippi, discussed "Functional Gastro-intestinal Problems Commonly Seen." This paper was especially well received and you will have the privilege of reading it at an early date.

President Max Roy of Little Rock presided as if he had been born to the job. He was also a genial host to the Past Presidents Club for the annual dinner.

We congratulate Drs. Omar Simmons of Newton and L. B. Otken of Greenwood upon their election as president-elect and vice-president respectively. They will serve Mississippi well.

The night of the annual banquet was unusually good. The Memphis doctors' wives furnished the entertainment and it was really a scream, unique and greatly enjoyed.

Technical exhibitors were well represented. They have been most loyal and helpful to the Mid-South for many years. They have visions of service also. Medicine owes a big debt to research men and laboratories.

Mississippi was quite well represented at the meeting. Dr. Guy Vise, president of the Mississippi State Medical Association and a member of the Council of the Southern;Dr. R. J. Moorehead of Yazoo City, president-elect of American Physicians and Surgeons, were among those attending.

The good work of Mr. Leslie Adams, executive secretary, was evident along with the fine aid of Drs. Thurman Crawford and Gilbert Levy.

The Mid-South is looked upon as the mother of this type of organization for the South. We have friendly competition in the New Orleans Assembly, the Tennessee Valley and the Atlanta Graduate Assembly, all of which are doing a wonderful work.

Dr. William G. Stephenson is now president of the Mid-South. He has the know-how for such meetings. His ability has been demonstrated. We can be assured of the biggest and best meeting of the Mid-South for many years in 1960. Make your plans now to attend.

IT GETS TO BE THE THING TO DO!

In addition to a distorted criticism of antibiotic usage in general, an article in *Saturday Review* singled out a Pfizer advertisement of signemycin for comment and only part of the story was reported. We quote the medical head:

> Insofar as the misuse of antibiotics is concerned, Pfizer has never encouraged the use of antibiotics for any indications except those for which they are known to be effective. In no instance have we ever made a claim for any of these products that has not been substantiated by scientific reports. We believe that the decision to prescribe antibiotics, or other therapy, and the choice of single or combination drugs of any kind, is the prerogative and responsibility of the individual physician in his own practice.

FROM DR. DICKS

A nice note from Dr. J. W. D. Dicks expresses deep regret over the death of Dr. Felix J. Underwood. He feels as every one does about the going of Dr. Underwood.

Dr. Dick, one of the cultured and refined exponents of Mississippi medicine, is urged to attend our next state meeting in Biloxi in May, sit with the Fifty Year Club and just see how the doctors appreciate him. His address is: Apt. 6, 82 Columbia Heights, Brooklyn, N. Y.

MID-SOUTH ASSEMBLY SELECTS OFFICERS

Dr. Omar Simmons, general surgeon of Newton, Miss., was named president-elect of the Mid-South Postgraduate Medical Assembly at the annual meeting in Memphis in February.

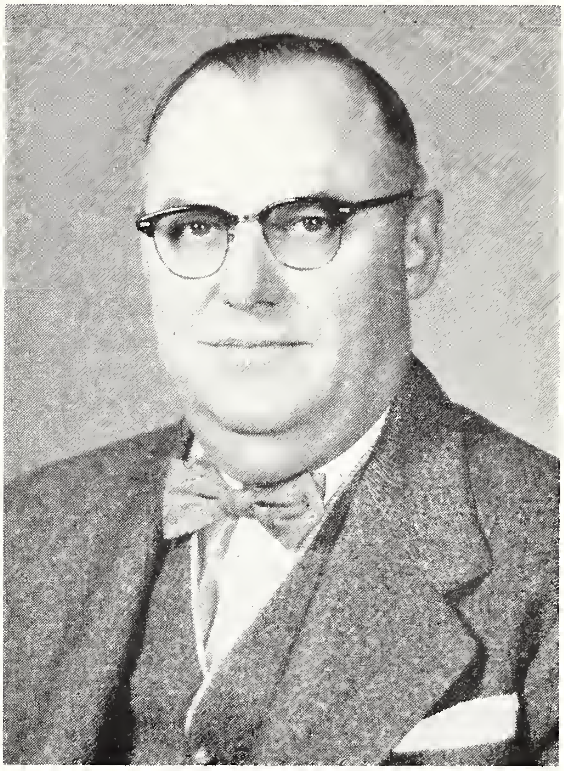
Dr. William G. Stephenson of Chattanooga assumed the presidency, succeeding Dr. Jesse Max Roy of Little Rock, Arkansas.

Dr. Simmons is a past-president of both the Mississippi Hospital Association and East Mississippi Medical Society.

Elected vice-presidents are Dr. David E. Stewart of Brownsville, Tenn., Dr. L. B. Otken of Greenwood, Miss., and Dr. C. G. Swindle of Marked Tree, Ark. Dr. Thurman Crawford of Memphis was re-elected secretary-treasurer.

Crippling strikes one family in five every year in the United States.

CHATTANOOGAN MID-SOUTH POSTGRADUATE PRESIDENT



Dr. Stephenson

Dr. William G. Stephenson, Chattanooga surgeon and founder of the Tennessee Valley Medical Assembly, was elected to head the Mid-South Postgraduate Medical Assembly in February.

Dr. Stephenson is a graduate of the Medical College of Virginia and took his internship and surgical residency at Erlanger Hospital. He is a fellow of the American College of Surgeons; a fellow and state regent of the International College of Surgeons, fellow of the Southeastern Surgical Congress, a member of the American Association of Railway Surgeons, the Chattanooga Academy of Surgeons, the Chattanooga and Hamilton County Medical Society, Southern Medical Association, Tennessee State Medical Association and American Medical Association. Dr. Stephenson is a member of the staff of Erlanger Hospital, Memorial Hospital and Tri-County Hospital at Fort Oglethorpe.

SYMPOSIUM ON THYROID DISEASES

The Fifth Annual Surgery, Radiology, Pathology Symposium on Thyroid Diseases, their diagnosis and treatment, will be held May 8 and 9, 1959, at the University of Oklahoma Medical Center. For final program write Office of Postgraduate

Education, University of Oklahoma Medical Center, 801 Northeast 13th Street, Oklahoma City 4, Oklahoma.

GRADUATE COURSES IN OTOLARYNGOLOGY

The Department of Otolaryngology, University of Illinois College of Medicine, will offer two special postgraduate courses in the fall of 1959:

September 18-26—Annual Otolaryngologic Assembly. Guest lecturers will participate in an entire day's program reviewing the latest advances and principles of temporal bone surgery.

November 9-21—Course in Laryngology and Bronchoesophagology. Dr. Paul Holinger, chmn.

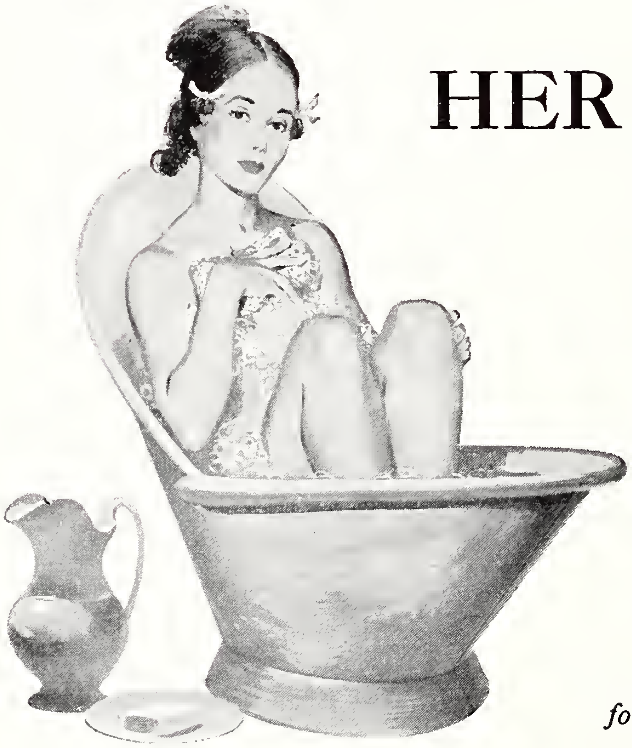
YOUTH CONFERENCE ON THE ATOM

The first national Youth Conference on the Atom will take place in Atlantic City, New Jersey, on April 30 and May 1. The purpose of the conference is to present to the nation's most able high school science students and teachers an authoritative picture of the peaceful atom in all its various applications, and probably more important, to help advance interest in the study of science among the nation's youth.

Some 500 students and teachers from high schools all over the country will participate in the conference, and they will represent winners of local science fairs, special written examinations, and in other ways, the top science students in the country.

The program will bring together, too, the most distinguished leaders in the field of atomic energy. These include: John A. McCone, chairman of the Atomic Energy Commission; Dr. John Laughlin, chief of the division of physics at Sloan-Kettering Institute for Cancer Research, who will speak on the role of the atom in medicine, and

FOR SALE: A 30 MA Portable Westinghouse X-Ray machine, in use two years. View box, two casettes, four film hangers, tank, darkroom timer and light, marker, measurer, upright casette holder (for chests). Ready for use except for solutions, including two packages of films. Complete $700.00, financed. Guaranteed to take acceptable x-rays, delivered and installed, for the cost of plumbing, light-proofing a closet. Or will sell as is, where is for $500.00 cash. Richard L. George, M.D., 107 S. 7th Street, Columbus, Miss. Telephone FAirfax 8-1881.



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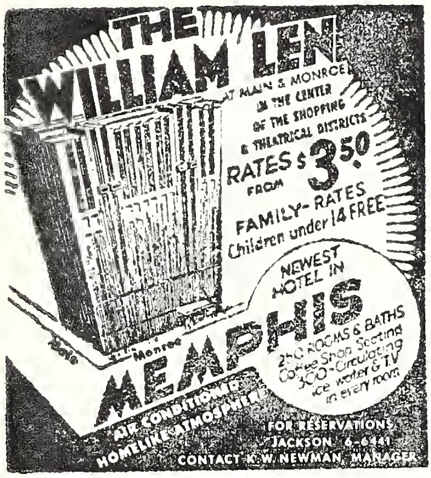
WHAT EASTER SEALS DID LAST YEAR

A contribution to Easter Seals in 1958 helped operate services and facilities which set 130,568 children and 27,278 adults on their way to rehabilitation. It also aided another 78,821 children and 9,896 adults in programs co-sponsored by Easter Seal societies with other organizations.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RESIDENT WANTED:

The Methodist Hospital, Memphis, Tennessee, 425 beds now in operation and 500 beds by January 1960, is establishing a one-year RESIDENCY IN INTERNAL MEDICINE beginning January and July, 1959. Salary $325.00 per month. Uniforms and food provided. Living-in optional. Women eligible. Approval pending inspection May 1959 and will be retroactive to January 1959. For information, contact J. M. Crews, Administrator, Methodist Hospital, Memphis, Tennessee.
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Common Functional Gastrointestinal Disorders[*]

WILLIAM D. DAVIS, JR., M.D.[†]
New Orleans, Louisiana

FUNCTIONAL DISORDERS of the gastrointestinal tract may be considered to be those disturbances of the digestive tube that occur in the absence of demonstrable pathologic change, either as a result of autonomic stimulation or exposure to chemical or physical agents. Patients with such disorders are disliked by many physicians and are constantly "brushed off." They are notorious "shoppers," in many instances wandering from physician to physician and clinic to clinic with ever-mounting disappointment and increasing hostility toward physicians. Better handling of this group of people would materially improve a presently strained physician-patient relationship.

These gastrointestinal disorders are in general characterized by variability. They or some related conditions have usually been present for a number of years when the patient is seen by the physician, and they frequently involve different portions of the gastro-intestinal tract on different occasions. They are irregular in occurrence and do not possess the true periodicity that characterize peptic ulcer. Rarely do they awaken the patient at night or cause obvious deterioration of the patient's general physical condition, though occasionally severe functional problems may produce significant deterioration and even threaten life, as in anorexia nervosa.

In general, it is wise to think of two categories of functional gastrointestinal complaints. In the first, the gastrointestinal disorder is a minor part of a major personality disturbance. This may range from the extreme, presented by a hysterical person with magnification of usual or unimportant visceral sensations into a crippling illness, through a severe character disorder or schizoid personality with disabling intestinal pain. Characteristically, again, these patients present long histories of difficulties frequently involving many organ systems and usually incapacitating them for productive occupation. Many are reluctant to accept a functional explanation and from a psychiatric standpoint may represent, with their symptoms, as reasonable an adjustment as is possible for them under the circumstances. Formal psychiatric consultation is indicated in these patients though the verdict will frequently be "not suitable for psychotherapy," and they then must be treated symptomatically by the family physician with sympathetic support.

A small percentage of patients who perhaps fit at one end of the spectrum of this category are those with mild general tension states and mild, not incapacitating gastrointestinal symptoms that are easily handled by reassurance and symptomatic prescription. However, most patients with functional gastro-intestinal symptoms are fairly well integrated, productive individuals who have specific syndromes mirroring various areas of stress. From above downward these may be listed as globus hystericus, esophageal spasm, aerophagia, pylorospasm, functional vomiting, irritable colon and proctalgia fugax. Both cardiospasm and megacolon have been omitted from consideration because of their possible pathologic component of ganglion cell absence, and though choledochodyskinesia may properly be included, I have yet to see a patient whose complaints are referable to this anatomic region without other adequate explanation for his symptoms.

Diagnosis of these diseases depends on two equally important conditions: 1) positive demonstration of the characteristic historical features of a functional problem with its specific syndromic characteristics and 2) exclusion of organic diseases, which may be manifest or masked by functional complaints. It must never be forgotten that carcinoma may develop in a patient with an irritable bowel and that a patient with pylorospasm may have gallstones.

Clinical Experience

Experience with functional gastro-intestinal disorders at the Ochsner Clinic is contained in Table 1, in which is shown the number of patients with

TABLE I
DISTRIBUTION OF PATIENTS WITH FUNCTIONAL DIGESTIVE DISEASE SEEN IN DEPARTMENT OF GASTRO-ENTEROLOGY AT OCHSNER CLINIC DURING 1957

Diagnosis	*No. of Cases*		*Total*	*% of*
	Male	*Female*		*Total*
Irritable bowel	86	130	216	59
Aerophagia	18	16	34	9
Pylorospasm	21	8	29	8
Esophageal spasm	9	10	19	5
Functional vomiting	5	6	11	3
More extensive personality problems	28	34	62	17

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[*] Presented at the Mid-South Postgraduate Medical Assembly, seventieth annual session, February 9-13, 1959, Memphis, Tenn.

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these various difficulties who were seen in the Department of Gastroenterology during 1957. Surprisingly enough, they constituted only 38 per cent of the total number of patients seen in the department during this period. However, inclusion of patients with duodenal ulcers raises the proportion to 58 per cent. Many patients presented more than one manifestation at the same or different times during the course of their illness. Nonetheless, we believe that classification as far as possible by means of the most prominent symptom is useful.

In the irritable bowel group, which was the largest category, there were more females than males. When the sex difference of this category by decades was determined, however, it was noted that near the age of 50 years there were nearly as many males as females. In 11 per cent of the patients with irritable bowels, aerophagia was a prominent manifestation whereas pylorospasm and functional vomiting were less common. Eleven per cent also showed evidence of widespread profound anxiety or other personality derangement. In this connection it is interesting to note that a similar percentage (10 per cent) had not improved on followup examination. This suggests that these patients are largely the ones who do not improve with usual treatment.

Upper Gastrointestinal Complaints. The categories of aerophagia, esophageal spasm, pylorospasm, and perhaps functional vomiting might properly be combined as upper gastrointestinal or dyspeptic complaints. In these categories there were more males than in the irritable bowel group. It is interesting to note that the second most numerous group constitutes those patients who have extensive multiple system complaints and more extensive personality problems. Many of these were latent psychotics or had profound character disorders. These constituted the greatest concentration of treatment failures, although with sympathetic support many assumed their responsibilities acceptably. However, some had relatively mild general tension or anxiety states with mild, easily resolved complaints.

The patients with manifestations of irritable bowel were characteristically tense, meticulous, conscientious women usually in the third or fourth decade of life with areas of difficulty resolvable frustration giving rise to hostility and guilt feeling. However, occasional patients were simply hard-driving, tense, high-strung persons who exposed their intestinal tracts to excessive amounts of caffeine, alcohol, roughage and seasoning (Fig. 1). They usually complained of abdominal distention with varied discomfort interspersed occasionally with severe cramping pain usually in the right or left upper or left lower abdominal quadrant associated with constipation, bouts of diarrhea, or alternation of these. Mucus is a frequent component of the stool though blood is rather rare.

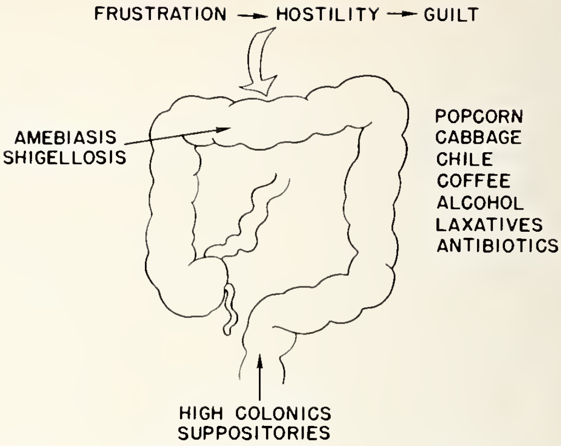

Fig. 1: Diagram showing factors contributing to the irritable bowel syndrome.

Patients frequently complain of systemic manifestations, attributing headaches and dull dizzy feelings to infrequent evacuation of the bowel and anorexia, and early morning fatigue to "toxins" arising from the stagnant bowel. However, many of these patients are productive useful members of society despite their complaints.

On abdominal palpation the colon is tender, and frequently a spastic, rope-like sigmoid may be felt in the left lower abdominal quadrant. On occasion, the cecum may also be palpated as a distended globular mass in the right lower abdominal quadrant. Sigmoidoscopy tends to be unusually painful for these people and is associated with secretion of large amounts of mucus. The intestinal mucosa is either normal or slightly reddened. The vascular pattern is usually clearly visible, though on occasion, in patients with longstanding difficulty a characteristically slick, shiny glary mucous membrane may be seen which obscures the vascular pattern. However, the mucous membrane presents normal resistance to trauma and there are characteristically no ulcerations or evidences of submucosal scarring.

Examination with barium enema does not reveal any characteristic abnormality but on roentgenography of the small intestines frequently "dysmotility" or incoordination of the motor function of the intestine will be indicated by segmentation, hypermotility, or failure of the stomach to empty by the time the head of the barium meal has arrived in the colon. Characteristically, there are no abnormalities demonstrable in laboratory tests in these or the other functional gastrointestinal syndromes.

In addition to the usual problem of exclusion of neoplasm of the colon and stomach, amebic and shigella colitis, ulcerative colitis, regional enteritis, and diverticulitis, it may be extremely difficult to exclude chronic pancreatitis with steatorrhea or cancer of the pancreas. Lower abdominal or lumbrosacral pain may closely mimic prostatitis or vesiculitis in the male or endometriosis or pelvic inflammatory disease of the female. Skeletal muscle spasm caused by mechanical difficulty with the lower thoracic or upper lumbar vertebrae may also cause confusion. The rare case of functioning carcinoid with diarrhea must also be excluded.

Patients with *aerophagia* characteristically are male, are rapid eaters, engulf large amounts of fluids with their meals and have occupations that exert considerable pressure on them. They frequently imbibe large amounts of coffee, smoke too much, and complain of epigastric fullness and the necessity for belching shortly after eating. Those who belch easily are often not troubled by their problem unless esophageal spasm with retrosternal pain accompanies the aerophagia. On the other hand, those who have difficulty belching frequently continue to complain of fullness, distention, and cramping pain until several hours after the meal. A particularly prominent member of this group of patients is the one who learns to swallow air into the esophagus in an attempt to induce regurgitation of air from the gastric bubble which results in repeated loud belching usually with only the briefest symptomatic relief.

Esophageal spasm is a frequent accompaniment of aerophagia and may occur in an extremely anxious person. It is manifested by severe retrosternal pain which penetrates to the back immobilizing the patient. It is worse during deep inspiration and may be reproduced by distention of the lower end of the esophagus with a balloon. Often, patients are initially afraid that they have suffered a heart attack and are extremely fearful of recurrence of symptoms. Physiologically, the spasm may be produced by regurgitation of gastric contents into the lower end of the esophagus or specifically related to alteration of autonomic control secondary to disturbances of the higher centers. Usually, quick diagnostic relief may be obtained by placing a nitroglycerine tablet under the tongue. It is noteworthy that the newer anticholinergics, by removing the usual vagal inhibition to contraction of the cardiac sphincter, may intensify or reproduce symptoms rather than relieve them. These manifestations may be related to hiatus hernia, and careful roentgenography of the esophagogastric area and frequently esophagoscopy may be needed to make the differential diagnosis.

Pylorospasm is a common accompaniment of these conditions as well as of functional vomiting. Patients are predominantly male. They often complain of moderate to severe epigastric pain shortly after eating. Nausea with spontaneous or induced vomiting relieves the pain. These patients also tend to be rapid eaters and excessive indulgers in coffee, cigarettes and alcohol. Occasionally pylorospasm is difficult to differentiate from pyloric or channel ulcer, and of course, it may be associated with duodenal ulcer and secondary pyloric spasm.

Patients with simple *functional vomiting*, in which a portion or all of every meal is regurgitated, are usually somewhat more profound neurotics than the foregoing groups. They frequently have no nausea. In some, anorexia nervosa may eventually develop.

Treatment

Treatment of these conditions begins with the first interview in which the physician takes an extremely careful and searching history and does a thorough physical examination. This serves the double purpose of excluding serious organic disease and assuring the patient that his complaints are being painstakingly evaluated. After this and the necessary laboratory investigations have been completed, in order to exclude significant organic diseases, the patient is informed that fortunately no serious organic illness has been discovered. However, he is immediately assured that his symptoms are real and of significance, and that in all likelihood he can be helped. He is then given an explanation of the mechanism of production of pain by smooth muscle spasm and of distention and discomfort by swallowing air. It is emphasized that although benefit can be obtained, a great deal of the success of the program depends upon the patient's interest and cooperation and that he can do much to help himself with proper guidance. Dietary habits are checked and initially a rather bland diet is prescribed with insistence on ingestion of three reasonably good meals and approximately 3000 cc. of fluid in twenty-four hours. The excess roughage and seasoning is eliminated and in patients who have severe diarrhea or severe abdominal pain a rigid, low residue diet is prescribed in the beginning. A program of regular daily physical exercise involving a tolerable amount of pleasant exercise for thirty to forty-five minutes several times a week is suggested and either a mild sedative or a combination of sedative and antispasmodic is usually prescribed. The areas of tension that have been uncovered during the diagnostic examination are discussed at length and these are further discussed at intervals as needed. Opportunity for ventilation is offered when indicated and seemingly safe.

In those patients with irritable bowel frequently a smoothage material, such as one of the hydrophilic colloids, is prescribed. An anticholinergic is usually preferred to atropine or belladonna, as apparently these drugs have a somewhat greater effect on the musculature of the small intestine and colon. The patient is advised to establish a regular time for defecation after meals and to avoid hurrying during defecation. Heeding of the defecation reflex at all times is also emphasized.

As improvement occurs, the patient is urged to expand the scope of his diet, to discontinue medication and to feel that he is essentially unrestricted. Resumption of the prescribed diet and medication for periods of stress or exacerbation of symptoms is recommended. A fecal-wetting agent as well as a low tap water enema may be necessary after three days without a bowel movement in patients with severe constipation.

Patients with aerophagia are instructed to eat slowly, drink fluids either before or after meals but never with meals, and be extremely careful to drink with a closed system between the liquid surface and the lips in order to avoid air-trapping beneath the palatal arch. Straws are interdicted as are carbonated beverages for patients whose symptoms persist.

If esophageal spasm is a part of the trouble, addition of tincture of belladonna or atropine to a tolerance level before each meal and at bedtime and use of phenobarbital are most efficacious. As previously mentioned, nitroglycerine is useful in aborting a specific attack of esophageal spasm, and on occasion thick solutions of topical anesthetic agents may be helpful in breaking the reflex of spasm. Rarely has dilatation of the lower end of the esophagus been necessary in these patients but on occasion when other means have failed, esophagoscopy and dilatation with a Mosher bag have seemed to be of help. Conversely, diagnostic esophagoscopy may be most helpful in excluding organic causes of esophageal spasm.

Patients with pylorospasm are advised to eat slowly, avoid eating when under tension, reduce the amount of caffeine, tobacco, alcohol and seasoning, and take an antispasmodic and antacid demulcent solution, such as Maalox®.

For functional vomiters frequently simple reassurance is helpful. Use of some of the newer tranquilizers, such as Trilifon®, Thorazine® or Marezine®, may be of benefit.

If the physician is able to maintain a sympathetic but objective interest in these patients, offering actual and symbolic support, helping to provide ways for dissipation of hostility and guilt and avoiding imposing his own hostility on the patients, he will be able to help most of these patients to assume a productive secure place in the community.

PASTEUR THE MAN

We think of Louis Pasteur as the father of curative and preventive medicine. It is hard to understand how one man could have done so much for medicine and the social and economic life of his times. Pasteur was born into the family of an ex-sergeant of Napoleon's army, and lived from 1822 to 1895.

Pasteur recognized that faith in God is of supreme importance in the life of the individual, and believed that science should bolster this faith.

He believed in work, and wrote his sisters, "Work, love one another, work." "With knowledge one is happy, with knowledge one rises above others."

Pasteur made history in the study of "spontaneous generation." Also in the discoveries he made in studying silkworm diseases, set him far on the road of germ theory.

He had trouble with his colleagues in the Academy of Science. Pasteur took the stand that Christ is the center of all Truth and that it is the purpose of science to back this up. "The lasting truths of nature go beyond the scientific investigations of man," he postulated.

At forty-six he had a stroke of paralysis and his friends insisted that he retire. But he lived to be seventy-three and did his greatest work in his last years.

The Dangers for the Fetus in the First Three Months of Pregnancy*

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Recently I saw a patient who illustrated dramatically the problem of the possible danger to the fetus which may result from disease of the mother in the first trimester of pregnancy. This 27-year-old woman gave the following story. She had had two normal pregnancies with delivery of two normal children, a boy in 1955 and a girl in 1956. There had been no complications. Her last normal menstrual period began on June 29, 1958. About July 4, her three-year-old boy developed fever and a rash and about July 20 she herself developed a slight fever and a similar rash which disappeared in a few days. At that time there was German measles in the community and in retrospect it appeared that both her son and she had German measles. Her physician did not see her at the time and she thought nothing of it. About two months later, when the news of her pregnancy had spread, a well-meaning friend called her and told her that she had probably had German measles while she was pregnant and that the baby was certain to die. At this point, in considerable distress, she consulted her doctor, and a little later she was referred to me. On going into her history it appeared that her menstrual cycle was quite short (21 to 23 days). With her last menstrual period on June 29 her next period would have been expected about July 21. Therefore she probably conceived about July 6 or 7 and was about two weeks pregnant when she had what appeared to have been German measles. On examination no abnormalities were found. The uterus was the size of a three-and-a-half-month gestation and the remainder of the examination was negative. The problems she presented were: First, the most important was it likely that the baby would be born deformed? and secondly, if so, zines in the last two or three years on the dangers to the fetus in pregnancy.

To clarify the situation it is first necessary to define what we mean by "dangers." The fetus may die, it may be born deformed, or it may have a greater susceptibility to disease in the first few months of life. These ill-effects depend on deleterious changes in the intrauterine environment of the fetus during pregnancy. Therefore, in order to understand the problem early, we need to know the following:

1. The specific stages of gestation at which the various fetal organs are developed.

2. The maternal conditions which may affect such development.

3. Finally, when we get some sort of answer to the above, we can make an intelligent guess as to what can be done to modify or prevent the conditions which may produce harmful changes in the fetus.

In the last few years the study of the effect of various insults on pregnant animals, correlated with the observed results of certain stresses in humans at definite times in pregnancy, has brought theoretical embryology into a more practical focus. Thus it is now possible to make a tentative calendar of the development of the major organs during early pregnancy in the human, and in this way to indicate some of the changes and developmental anomalies which may result[1].

During the second week of gestation cell division occurs. Stresses at this time may produce anomalies of twinning—double-headed monsters, etc., or anomalies of the eyes—cyclopia.

During the third week the heart and gut lie outside the body and the limb buds are forming. Anomalies such as ectopia cordis, ectromelia (no limbs or abortive limbs), or sympodia (fused feet) may be seen.

During the fourth week the body somites are undergoing active development: the trachea separates from the esophagus. Anomalies such as tracheo-esophageal fistula, hemivertebra or deformities of the ribs may occur.

During the fifth week differentiation of the lens in the eye, of the extremities and of the face takes place. Anomalies such as congenital cataract, hand and foot deformities or harelip may occur.

During the sixth week, in addition to the above, further development of the heart occurs. Anomalies such as congenital heart disease may be seen.

During the seventh week the palate and jaw are developing as are the fingers and toes. Anomalies such as cleft palate, loss of a finger or toe or some of the previously noted anomalies may be seen.

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†From the Department of Obstetrics and Gynecology, University of Mississippi School of Medicine.

During the eighth week the skull is developing and at this time anomalies such as mongolism may occur.

It is in the first eight weeks of intrauterine life that the main organs differentiate and stress in this period produces the most easily recognizable anomalies at birth. Much less is known about stress later in pregnancy. Certainly development and differentiation continue and stress presumably has some effect, especially on the central nervous system.

The above represents only a formalized schema of what may happen. Overlap can and does occur. One must remember also that many of the observations have come from animals and have been confirmed in humans only by the appearance of anomalies at birth after a known stress in pregnancy. Hereditary factors are also important. However, the knowledge of the stage specificity of organ development and its relationship to maternal stress and the development of congenital deformities represents a solid foundation for the management of clinical problems.

The effect of adverse environment on the mother in pregnancy, especially in the first three months, may be defined as *stress*. Present knowledge indicates that the following kinds of stress may be of importance.

1. Infections
2. Radiation
3. Anoxia
4. Emotional strain
5. Threatened abortion
6. Diet

Exactly how these stresses affect the developing fetus is not clear. There must be several different mechanisms. Lack of oxygen, changes in hormones reaching the fetus or direct infection with viruses may all influence the growing fetus. Furthermore, we have at present no way of detecting changes in growth patterns while the fetus is still in utero. The only possible method of measuring the influence of these stresses is by fetal death, fetal malformation or increased susceptibility to disease in the first few months of life. Thus any study of changes in the incidence of fetal death or malformations must be considered in the light of what one normally expects to find in the population as a whole.

It is also pertinent to emphasize the incomplete nature and difficulty of studies upon the effect of stress, since one can only measure the late effects and not the immediate impact of the insult upon the fetus. An ideal study would start with the pregnant woman who acquired German measles or some other stress, follow her through pregnancy and compare her outcome with that of normal women. However, many of the studies in this field have been retrospective: that is, they have started with the baby with congenital anomalies and have worked back to the history of illnesses during pregnancy. Unforunately, memory is not always reliable.

With these precautions in mind we can consider the various possibile stresses about which some information is available.

1. *Infections.*

Impetus to the study of this whole subject was given by the discovery in Australia in 1941-43 that there was a marked association between rubella infections in pregnancy and the incidence of congenital deformities in the offspring. It was first thought that 80 to 100 per cent of mothers who had had rubella in the first trimester of pregnancy were likely to have deformed infants. However, many of these early studies were retrospective, and it was not until adequate prospective studies were done that the real incidence of malformations became apparent. Recent work on this subject has been summarized by Greenberg, et al[2]. In the population as a whole the incidence of stillbirths is approximately 1.5 per cent and of congenital deformities 0.5 per cent. The evidence from several studies indicates that when a woman acquires rubella in the first trimester, the incidence of stillbirth is 7.2 per cent and of congenital deformities 12 per cent. When rubella is acquired in the second trimester the incidence of stillbirth is 4.6 per cent and of congenital deformities 3.8 per cent. With rubella acquired in the third trimester the occurrence of stillbirths and congenital deformities is not different from the normal. Somewhat similar, though lower figures are given in a study by Lundstrom from Sweden[3]. In this investigation maternal rubella between the first and sixteenth week of pregnancy resulted in an incidence of stillbirths of 5.9 per cent, as opposed to the control figure of 3.2 per cent and an incidence of congenital deformities of 4.5 per cent as opposed to the control figure of 1.4 per cent. When rubella was acquired between the sixteenth and fortieth week of pregnancy, there was little difference from the control figures.

Thus it seems reasonable to conclude that if a mother has German measles in the first trimester of pregnancy her chances of having a stillbirth or deformed infant are considerably greater than normal; however, they are not nearly as high as had been supposed at one time. In fact, if she has a live baby there are approximately nine chances out of ten that it will be perfectly normal.

The situation with regard to other infections is less clear cut. In 1953, Kaye, et al[4], reviewed 154 cases from the literature in which a virus disease had been acquired during the first trimester of pregnancy and noted a 21 per cent of congenital anomalies in the infant. Most of the cases reported were of measles, mumps and poliomyelitis. A few cases of chicken pox, infectious mononucleosis, influenza and virus pneumonia were reported. However, this was a retrospective study. More recently, in England, Bradford Hill and his coworkers[5] reported that in 35 women who had had mumps during the first trimester of pregnancy, 10 who had had measles and 30 who had had chicken pox, all of whom were followed during pregnancy, the incidence of congenital anomalies was no greater than normal. There was some increase in prematurity in the women who had had chicken pox, but this was not statistically significant. Kaye, et al, suggested that other acute infectious diseases, were not important. However, McDonald, in a good prospective study, found that a higher number of women, whose infants had major congenital deformities, had had an acute infectious disease in early pregnancy[6].

In summarizing the effect of acute infections in early pregnancy, it can be said that German measles has definitely proved to be deleterious to the fetus. Other infectious diseases may or may not be harmful; certainly there is no marked association between such illnesses and the incidence of congenital deformities.

2. *Radiation*

The effect of radiation upon human beings, and particularly upon pregnant women, has recently become a subject of great interest. Radiation may produce a direct effect upon the fetus, resulting in death, congenital deformities or a later susceptibility to malignant and possibly other diseases. It may also produce an indirect effect upon the genes of both mother and infant, the results of which might take many years to evaluate.

A good deal of experimental work on the effect of radiation in animals has been reported. Most of these investigations have been on small animals and have involved the use of quite large amounts of radiation. By such means it is possible to produce deaths in a large proportion of the litters. Congenital deformities can also be produced by radiation in rats and mice and, again, the type of deformity depends upon the stage of pregnancy at which the radiation is administered. Long-term genetic effects have been produced in the fruit fly, which was the first experimental animal in this field, and later in mice. This subject is well reviewed by Muller[7]. It should be noted that most of the mutations induced by radiation are harmful.

There is no doubt that in humans fetal death can be produced by therapeutic radiation in early pregnancy. One of the first studies on this subject was done by Murphy[8]. He reported a 30 per cent incidence of abortions in 106 women who received therapeutic radiation during pregnancy. According to his figures, however, this was not different from the abortion rate in the population as a whole, since he quoted a figure of 33 per cent spontaneous fetal loss. Mayer[9] reported a 96 per cent success in producing therapeutic abortion by radiation in 200 women. These observations have been confirmed by others. Of particular interest is the effect of radiation produced by atomic bombs. In Nagasaki, 30 pregnant women were close to the center of the blast and were found to have major signs of radiation damage. In this group there were 13 fetal deaths, either by abortion or in the perinatal period[10].

Congenital deformities may also be produced by radiation. For example, in Murphy's study, 25 out of 74 babies born alive to women who had had therapeutic radiation during pregnancy had congenital defects. Seventeen of these 25 had microcephaly. Again, of the sixteen babies born alive to women near the atomic blast at Nagasaki, mental retardation with reduced head circumference was noted in four. Evidence as to the effect of lesser doses of radiation in producing congenital deformities is equivocal. Macht and Lawrence, in a national survey[11], found more congenital defects in the children of persons exposed to small doses of radiation than in a control series.

Of recent interest has been the possible effect of radiation during pregnancy upon the occurrence of leukemia and other malignant diseases in childhood. Stewart, et al[12] studied the occurrence of prenatal radiation and other factors in a group of children who had leukemia and other malignant diseases in the first ten years of life, and compared them with a suitable control group of children. The frequency of direct fetal irradiation, virus infections and threatened abortion was significantly higher among the children who died of leukemia or malignancy than among the controls. Other factors, such as maternal age at pregnancy, x-ray exposures in infancy, acute pulmonary infections and severe injuries was also significantly higher in children who subsequently died of leukemia. It was concluded that fetal irradiation did not account for the recent noted increase in childhood malignancies, but the finding of a case excess for this event did underline the need to use minimum doses for essential medical x-ray examinations and treatments. A suggestive relationship was found between both the dose of x-rays and the date of exposure and later development of leukemia.

The genetic effect of radiation in human beings is uncertain. Many geneticists believe that even a small dose of radiation to the gonads may produce mutations which are likely to be harmful and which will not appear fully for several generations. On the other hand, there have been studies such as that by Kaplan[13] indicating no damage for two generations in women who received stimulating doses of radiation to the ovaries. Of course, two generations is not sufficient time to identify a serious mutation.

3. *Anoxia*

The basic work on the effect of anoxia was done by Ingalls at Harvard[14]. He found that when mice were exposed in a pressure chamber to the equivalent of 25,000 to 30,000 feet altitudes for periods of several hours, an increased incidence of fetal loss and congenital malformations was noted. This was assumed to be done to the anoxia which occurred. Again, the specific defects produced depended upon the stage of development at which the mice were exposed to anoxia.

In humans, isolated case reports suggest that when a woman is made anoxic for a considerable period of time during early pregnancy, as, for example, by a surgical procedure requiring deep general anesthesia, congenital deformities may occur. However, there is little to support the belief that mild degrees of anoxia, such as airplane flying or high altitude, may produce deformities.

4. *Emotional Stress*

Strean and Peer[15] were able to produce cleft palates in the young of mice treated with cortisone on the 9th, 10th and 11th day of gestation with considerable regularity. The same authors studied retrospectively the histories of 232 children with cleft palate. A high incidence of maternal physiologic, emotional or traumatic stress was noted at the time when fusion of the maxillae of the developing fetus was occurring. They postulated that excessive secretion of cortisone by the adrenal cortex in response to the stress might have been an important factor in the production of this congenital anomaly. While this is an interesting concept, the study did not employ the use of controls. It is quite possible that a similar group of mothers, whose infants did not have cleft palates, would have reported a like incidence of stress at this time of pregnancy. Thus, at the present time, we have no clear evidence as to the exact effect of emotional stress in pregnancy.

5. *Threatened Abortions.*

Spontaneous abortion occurs in from 10 to 20 per cent of pregnant women. A larger number than this, perhaps 30 to 40 per cent, have some bleeding during early pregnancy, some of which contributes threatened abortion. There is considerable evidence which suggests that threatened abortion adds considerable risk to the fetus both of later complications of pregnancy and possibly of congenital deformities. McDonald's study[6] indicated that a history of threatened abortion was more common among women who had congenitally deformed infants than among women who did not. Wory by Turnbull and Walker[16] from the University of Aberdeen also indicated the later danger to the fetus if a threatened abortion had occurred.

6. *Diet*

The health of the fetus at birth and during the first few months of life is related to maternal diet during pregnancy[17]. Studies in various parts of the world have shown that if a mother eats a poor diet during pregnancy she is more likely to have preeclampsia-eclampsia—with its attendant dangers for the fetus—premature babies, babies with lower birth weights and babies who are less healthy during the first few months of life. The important constituent of the diet is protein. High protein diet appears to have a valuable protective effect for the fetus. In addition to protein there has been considerable interest in the value of certain vitamins. In the study on the production of cleft palate by means of cortisone given during pregnancy, some protection against the effect of cortisone was afforded by the use of vitamins B_6, B_{12} and C[15]. Administration of methionine and Vitamin B to a group of pregnant women by Ferguson reduced this incidence of prematurity[18]. An additional influence of diet is shown by the effect of anemia in the mother on the baby[19]. Infants of anemic mothers frequently share the iron deficiency and such neonatal anemia might well predispose to the development of acute infections and other diseases at this time. A question remains as to when the effects of deficient diet may be most significant. It seems logical to suppose that a woman who enters pregnancy with a good diet will fare better, as far as her baby is concerned, than one who enters with a frankly deficient diet. The possibility of improving the condition of the fetus would seem to depend on the stage of gestation at which improvement in the diet is made. But over-all adequate diet before conception would appear to be the most satisfactory way of freeing the infant from the dangers of dietary deficiency in the mother.

The immediate practical problem is how to avoid stresses in pregnancy and what to do about them if they have occurred. It is important to emphasize again that much of the information regarding the effects of stress has been derived from animal experiments. We are still quite ignorant of many of these effects in the human being. Also, the occurrence of stillbirths and congenital deformities is not high. The vast majority of pregnancies end with the delivery of a normal infant. In considering the effects of stress we are dealing, in the present state of our knowledge, with a relatively small proportion of pregnant women, and we must remember that there are many other factors besides stress, such as heredity and so on, which may affect the fetus. However, from our knowledge of the effects of stress, we can make certain generalizations.

Infections represent an increased danger in the first trimester and this is particularly true of German measles. The advice given to mothers to let their girls contract German measles in childhood would appear to be sound. Where possible, pregnant women should avoid exposure to acute infections in pregnancy. In cases of known exposure to specific diseases in early pregnancy, such protection as may be available should be afforded. Specifically, gamma globulin or convalescent serum may be used in German measles. It should be realized, however, that the beneficial effect of this has not been proved and there is some evidence to suggest that subclinical German measles may be as serious for the fetus as the actual disease, clinically diagnosed.

Radiation, in the form of diagnostic or therapeutic x-rays, should be avoided during pregnancy and particularly during the first three months. However, where x-rays are vitally necessary for the health of the mother, they should not be withheld. In the light of our present knowledge of genetics, there would appear to be no excuse for administering x-rays to stimulate the ovary under any circumstances. The possibility of administering radiation in the course of diagnostic x-ray studies to a woman who may not know that she is pregnant deserves consideration. The device used now by some radiologists of requiring knowledge of the date of the last menstruation before abdominal x-rays are taken would seem to be worthwhile.

Since our knowledge of the effects of anoxia in the human being is relatively limited, there would appear to be little to be done except to avoid major degrees of anoxia. Thus elective operations requiring prolonged general or spinal anesthesia should be avoided during pregnancy, particularly in the first trimester. The question of whether a pregnant woman should travel by airplane has been of interest. Dr. Ingalls believes that it is inadvisable. However, it is doubtful whether a woman is exposed to significant anoxia during a flight in a commercial aircraft. The only studies done on the transport of women during pregnancy were reported by Guilbeau and Turner[20]. These authors found no ill effects in the form of abortion or premature labor from air travel in some 150 women.

About emotional stress so little is known that no satisfactory statements or advice can be given.

The dangers of threatened abortion must be recognized, but, in the present state of our knowledge, there is little that can be done to avoid them.

Dietary advice would appear to be an important part of any antepartal program. Ideally this should begin before conception. However, since it frequently does not do so, it should start as early in pregnancy as possible. In addition, the prescription of multi-vitamin supplements during pregnancy would seem to be advisable.

Finally it is relevant to consider what should be done if the mother has been exposed to stress in early pregnancy. In most types of stress the exact extent of the stress and its possible results are so uncertain that the over-all effect on the fetus is probably minimal and nothing but reassurance and conservative treatment is advisable. The same is true for acute infectious diseases in general: the evidence for possible damage to the fetus is certainly not sufficient to justify termination of the pregnancy. In German measles, such as the case described above, more definite information is available. However, even when the disease is definitely diagnosed when it occurs (and this is important), the baby still has about a 90 per cent chance of being normal. This, in the opinion of most reviewers at the present time and in my own view, is not sufficient to justify interruption of pregnancy, particularly since therapeutic abortion is by no means a simple procedure and increases in complexity after the second month of pregnancy.

SUMMARY

Recent knowledge has brought to our attention

the fact that there are many stresses which may influence the fetus, particularly in early pregnancy. As yet, our knowledge of these stresses and the way they act is imperfect. We need to be cautious about translating findings from animals to human beings. In any case, the chance of fetal death or malformation is relatively small in most instances and the vast majority of babies, whose mothers are exposed to such stresses, are perfectly normal. There are, however, certain specific problems in connection with infections, radiation, anoxia and diet in which the pregnant mother can be given useful help and advice.

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MISSISSIPPI PSYCHIATRIC SOCIETY FORMED

The newly formed Mississippi Psychiatric Society, a district branch of the American Psychiatric Association, held its first annual meeting on March 7, 1959, at the University of Mississippi Medical Center, Jackson, Mississippi. Dr. J. G. N. Cushing of Baltimore, Southern Area Representative on the Policy Committee of the Assembly of District Branches, addressed the group on historical aspects of the American Psychiatric Association and the formation of district branches. Dr. Hamilton Ford of the University of Texas Medical Branch, gave the academic lecture on "Phrenotropic Drugs—Applicability Based on Chemical Grouping." The meeting was attended by approximately 25 psychiatrists from throughout the state. The principal business conducted was completion of organization, acceptance of the constitution, and election of officers. Dr. Floy Jack Moore, chairman of the Department of Psychiatry, University of Mississippi Medical Center, was elected president to succeed Dr. Frank Donaldson, also of Jackson. Other officers elected as the first complete slate of officers are the following:

President-elect: Dr. Lawrence G. Behan, Veterans Administration Hospital, Gulfport, Mississippi.

Secretary-Treasurer: Dr. L. C. Hanes, Department of Psychiatry, University of Mississippi Medical Center, Jackson, Mississippi.

Council Member: Dr. J. J. Head, Clinical Director, Mississippi State Hospital, Whitfield, Mississippi.

Delegate to Assembly of District Branches: Dr. W. L. Jaquith, Director, Mississippi State Hospital, Whitfield, Mississippi.

Alternate Delegate: Dr. Beverley E. Smith, Medical Arts Building, Jackson, Mississippi.

The Effects of Topical Applications of Cortisone-Antibiotic Ointment on Surgical Incisions and Keloid Formation

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ONE OF THE PROBLEMS of wound healing, especially in the Negro race, is the development of keloids. This troublesome and unsightly complication is due to the excessive formation of scar tissue as a result of local reaction to burns, incisions, vaccination and other forms of trauma. The histological picture of a keloid is that of thick eosinophilic bands of collagen mixed with then collagenous fibers and long active fibroblasts. The decrease in elastic tissue which is seen in normal scar tissue is even more marked. Keloids are almost entirely limited to the dermis and are usually benign. Development of carcinoma in a keloid is uncommon and of sarcoma even more unusual.

The systemic and local use of cortisone have been successful in preventing excessive fibroplasia. The work of McLaughlin and Shector[5] indicates that local application of hydrocortisone in such conditions as severe contusions of fingers is highly effective as an analgesic and anti-inflammatory agent. However, wound healing has been shown to be variously affected by cortisone treatment. Cole et al[1] in 1951 concluded that the administration of cortisone had no effect on the healing of aseptic linear wounds in dogs. This work was confirmed by Upton and Coon[7] on normal and scorbutic guinea pigs. Healing of more complex wounds is generally delayed by cortisone as demonstrated by Creditor[2]. Taubenhaus[6] pointed out that cortisone interferes with the growth and division of cells in the connective tissue and epithelium. This impedes the development of granulation tissue and thus delays wound healing. The decrease in inflammatory reaction has been shown to be due to increased vascular tone. Fong and Louie[4] summarize the effects of cortisone on wound healing as a tendency to suppress inflammation and antibody formation, induction of lymphocytolysis and dissolution of lymphoid tissue, and enhancement of infection in the presence of a wide variety of organisms.

The object of the present study was to see whether the anti-fibroplastic properties of cortisone could be utilized in preventing the formation of keloids. At the same time it seemed desirable to try to prevent the development of infection by using a topical cortisone preparation in which antibiotics were incorporated.

METHODS

A total of thirty patients from the gynecological service of the University Hospital were used as subjects. Twenty-seven of these were Negro and three were white. Seven were between the ages of twenty and thirty, thirteen between thirty and forty, six between forty and fifty, three between fifty and sixty and one between sixty and seventy. All patients used in this study were carefully selected to exclude such conditions as obvious infections, carcinoma, chronic disease and marked obesity. Twenty-eight of the patients had abdominal hysterectomies, one had a tubal plastic procedure and a presacral neurectomy and one had bilateral wedge resection of the ovaries. Twenty-six had elective appendectomies. A vertical paramedian incision was employed in twenty-eight cases and a Pfannenstiel incision in two.

A standard method of surgical preparation was used. The abdomen was shaved, the skin was cleaned with phisohex solution and then rinsed with a 1:1000 aqueous zephiran chloride solution. Closure of the abdominal incision was performed in all cases by the same operator using a standard technique and a standard suture material. Briefly, this consisted of chromic No. 0 continuous suture for the peritoneum, interrupted chromic No. 1 for the fascia, interrupted plain No. 00 for the subcutaneous tissue and as ligatures. The skin was closed with inverted mattress sutures of No. 000 silk.

At the conclusion of the standardized closure a dressing containing the cortisone-antibiotic ointment was applied to one end of the incision (Flourinef S, E. R. Squibb Co.). This contained nine alpha-flouro hydrocortisone acetate, neomycin and gramicidin in an oleaginous base. To the other or control half of the incision an identical ointment lacking only the cortisone derivative was applied (Spectrocin, E. R. Squibb Co.). The technique of application was as follows: The end to which the cortisone ointment was to be applied was clearly marked at one point well away from the incision with gentian violet. This part of the incision was then covered with a sterile 4x4 gauze pad on which the cortisone ointment had been spread. A small divider of dry sterile gauze was then placed between this dressing and the remainder of the incision. The latter was then covered with a 4x4 gauze pad containing the

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"control" ointment. Applications of the two ointments were alternated between the upper and lower ends of the incisions in order to avoid possible differences in the healing potentials of the two areas.

On the second postoperative day the dressings were changed, the incisions evaluated and the two ointments applied as before. On the fifth postoperative day the sutures were removed, the incision again evaluated, but the ointments not reapplied. Most of the patients were followed on an out-patient basis after the removal of the sutures. Records were available on twenty patients at six weeks postoperatively and on four patients at three months postoperatively.

RESULTS

Each half of the incision was evaluated on the second and fifth postoperative day and at six weeks postoperatively. Clinical criteria of skin tenderness, edema, redness and heat were used. It can be seen from Table I that there was no significant difference between the experimental and control parts of the incisions on the second postoperative day. On the fifth postoperative day more tenderness, edema and redness were found in the experimental (cortisone treated) incisions; and in nine patients, abscesses had developed in the experimental half. At six weeks two additional patients had developed abscesses in the cortisone treated part. Early keloid formation was noted in six patients at the six weeks postoperative examination. In all cases keloid formation extended throughout the whole incision, there being no difference between the experimental and control portions. The abnormal findings did not seem to show predilection for either the upper or lower halves of the incisions. In the four patients seen three months after surgery there were no significant differences between the experimental and control portions of the incisions.

Additional observations made on the fifth postoperative day included the amount of pain on removing the sutures and the presence or absence of primary union of the incision. Pain on removing was similar in both groups and primary union occurred in all cases except in the cortisone treated portion of one incision.

The most distressing finding was the presence of wound infections, usually in the form of stitch abscesses. Nine were present on the fifth postoperative day and two more were found at the six weeks examination. All were in the cortisone treated portions. These infections were almost equally divided between the upper and lower halves of the incisions—six developing in the upper half and five in the lower half. Four of these infections required surgical drainage under general anesthesia with incision reaching to the fascia. The remaining seven patients required simple incision and drainage which was performed under local anesthesia on an out-patient basis.

DISCUSSION

In this limited series, the use of cortisone ointment did not appear to affect the incidence of keloid formation. It is possible that additional information might have been obtained from a longer followup or study of more cases. However, the fact that keloids developed in six patients in six weeks time throughout the length of the incision, irrespective of the type of treatment given immediately postoperatively, suggests that cortisone is probably not effective. The unfortunate development of infections discouraged us from carrying out further studies. It is conceivable that continued application of cortisone ointment after the first five days might have had some effect on keloid formation.

It would seem that the infections encountered in the incisions in this series of cases were to a great degree due to the cortisone ointment. All the infections occurred in portions of the incisions treated with cortisone. The possibility of other fac-

TABLE I

Postoperative Reaction of Incisions to Cortisone - Antibiotics (experimental) Ointment and to Antibiotic (control) Ointment:

	2nd P.O. Day		*5th P.O. Day*		*6 Weeks P.O.*	
	Exp.	*Cont.*	*Exp.*	*Cont.*	*Exp.*	*Cont.*
Cases	30	30	30	30	20	20
Tenderness	4	4	12	8	1	0
Edema	3	3	11	3	4	3
Redness	1	2	4	0	Not Measured	
Heat	1	2	3	3	Not Measured	
Abscess	0	0	9	0	2	0
Keloids	0	0	0	0	6	6

tors being responsible is to a large part excluded by the fact that the overall instance of wound infections on the same service for the six months prior to the study was 4.1 per cent and for the six months subsequent to it was 2.9 per cent. In this study instance of wound infection was 37 per cent and cultures taken from nine of the eleven infections showed a coagulase-positive micrococcus aures in five and no growth in four cases.

SUMMARY AND CONCLUSIONS

1. Ointments containing 1) cortisone and antibiotics alone were applied immediately after operation to alternate halves of surgical incisions in thirty cases.

2. Clinical evaluation of the incisions on the second postoperative day showed no difference between the two parts, whereas on the fifth postoperative day more tenderness, edema and redness were noted in the cortisone treated portions. In nine patients on the fifth postoperative day there were abscesses in the cortisone treated halves of the incision.

3. When keloids developed, they developed throughout the entire incision and there was no perceptible difference in keloid formation between the cortisone treated half and the control half.

4. Infections were noted in eleven out of thirty (37 per cent) of the portions of the incisions treated with cortisone ointment whereas no infections developed in the control portions of the incisions.

5. From this limited study it would appear that cortisone is not effective in decreasing keloid formation and that the use of ointments containing cortisone on surgical incisions carries a definite risk of wound infections.

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Medicine's Measure of Morality

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For more than forty centuries—yes, that's four thousand years, dating back twenty-one hundred years before Christ—there have been written guides, rules, standards, and laws governing the relation of the physician and his patient. It is neither unexpected nor unusual that our present-day *Principles of Medical Ethics* occupies a place of highest importance in this matter of being a doctor. Knowledge, understanding, and sincere belief in these moral dicta are as important to the physician as the fundamentals of anatomy, chemistry, physiology, and other basic sciences.

Medical knowledge casts the omnipresent shadow of responsibility. More than likely, life-and-death situations will be infrequent in your practice. Especially is this true of certain specialties. But the physician's responsibility is by no means limited to the stereotype of life-and-death obligations: Every patient at every consultation and attendance—however minor or critical—is entitled to and must receive the doctor's best. With medical care, as in boxing, second best just isn't good enough.

Section 1 of the *Principles* puts it this way: "Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion."

Slightly more than three centuries before Christ, Hippocrates, one of the most dedicated and thoughtful physicians of all history, wrote what we may regard as the first principles of medical ethics. Spelling out for all time professional behavior patterns in terms of morality, Hippocrates wrote:

"A Physician should be an upright man, in-

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*Presented before the Senior Students, University of Mississippi School of Medicine, November 24, 1958.

> structed in the art of healing . . . modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life."

Hippocrates' thinking and expression have weathered well through the centuries. This teaches us that time cannot erode truth.

Twenty-two hundred years after Hippocrates, a more able and competent medical profession finds his moral guideposts as usual, vibrant, and flexible as they were in the mind of this astonishing doctor-moralist.

It was just one hundred fifty years ago in 1803 that Percival penned his first "Principles of Medical Ethics." We often hear it said that medicine emerged from the dark ages during the 19th century in terms of scientific knowledge and present-day skills; this same concept may be applied to medicine's morality and date the emergence with Percival's work.

In May, 1847, medical leaders representing the states and territories of the new, struggling republic met at Philadelphia and organized the American Medical Association. While the primary purpose of the meeting was devoted to improving medical education—a task which AMA would be more than seventy years in achieving—the busy conferees found a moment to adopt the first version of the *Principles of Medical Ethics of the American Medical Association.* Official medical organization in this nation has never been without a formally stated moral charge to its members.

For one hundred ten years—until June 6, 1957, to be precise—the original *Principles* were revised and augmented on many occasions. An unbelievable number of additions which wandered away from the original concept and philosophy of medical ethics made the document unwieldy and cumbersome. At the time of its most recent and drastic revision in 1957, it had become a four thousand-word document containing all sorts of exhortations and injections on etiquette and manners, fairly well mixed in with guides for moral conduct and professional obligation. The present five hundred-word *Principles* was two years in the making, the work of the AMA Council on Constitution and By-Laws, with much advice and suggestions from state medical associations and individual physicians.

Often, physicians refer to the "code" of medical ethics. This is a mistaken and incorrect reference. Full appreciation must be developed that the *Principles* are intended to aid physicians individually and collectively in maintaining a high level of conduct. They guide and recommend; they in themselves do not govern. The Preamble to the *Principles* states in part that " . . . they are not laws but standards by which a physician may determine the propriety of his conduct in relationship with patients, with colleagues, with members of allied professions, and with the public."

In Mississippi, the state medical association states in its By-Laws that ". . . the *Principles of Medical Ethics of the American Medical Association* shall govern the conduct of members in their relations to each other and to the public." When a physician applies for membership in the Mississippi State Medical Association, he must sign a pledge to be governed by the Constitution and By-Laws of the American Medical Association, the state association, and the local medical society and be guided by the *Principles of Medical Ethics.* It is well for the young physician to know what he is signing.

The brief yet comprehensive ten-section document contains exhortations to the physician on goals of service, improvement of his knowledge and skills, and his scientific or professional attainment. He is urged to preserve and maintain the dignity and confidence enjoyed by the profession and to safeguard it against incompetence. He is told of his responsibility to patients, the circumstances under which he should dispose of his services and professional attainment and something of restrictions on sources of his income. One section alone is devoted to the physician-patient relationship and the final section emphasizes the responsibility and role of the physician as a citizen and member of society.

Sections 1 and 2 set out service aims, the manner in which medical care should be rendered, the responsibility of the physician to continue his medical education throughout his life and to teach others what he has learned. Section 3 provides the ethical basis upon which cultism is separated from science. It is unethical to associate voluntarily in any manner with a cultist.

Section 4 cautions the physician to safeguard the public and his profession from colleagues who are deficient in moral character or professional competence. Here, as in the final section, the doctor is advised to be a good citizen, to observe all laws, and to uphold the honor and dignity of his profession and accept its self-imposed disciplines. Without beating around the bush, the doctor is frankly asked to expose without hesitation illegal or unethical conduct of fellow members of the profession.

The only statement of a doctor's freedom of choice is contained in Section 5 where it is stated that " . . . a physician may choose whom he will serve." He is, however, told that ". . . having undertaken the care of a patient, he may not neglect him; and unless he has been discharged, he may discontinue his services only after giving adequate notice." He is sternly warned against solicitation of patients.

Section 6 prescribes in general terms the circumstances under which medical care is rendered. Corporate practice and exploitation of a physician through employment arrangements are held unethical. In addition to this restriction, the physician is urged to maintain a professional practice climate where the free and complete exercise of his medical judgment and skill is unimpaired.

The one reference to the economies of medical practice is made in Section 7 which is the longest of the ten parts of the *Principles*. In plain language, it is pointed out that the physician's professional income should be limited to medical services actually rendered by him or under his supervision to his patients. Two criteria are mentioned for establishing a fair fee for these services: The worth of the services rendered and the patient's ability to pay. The physician is warned against receiving commissions or rebates, more popularly called fee-splitting. So long as it is in the best interests of the patient, drugs, remedies or appliances may be dispensed or supplied by the physician. This change was made in 1955 before which time it was unethical for a physician to dispense drugs or devices to his patients. In rural or certain remote situations, it is sometimes not practical for the patient to obtain these necessary adjuncts to medical care other than through the physician.

The exercise of professional and moral judgment are outlined in Sections 8 and 9. A physician should seek consultation upon request, in doubtful or difficult cases, or whenever it appears that the quality of medical service may be enhanced thereby. He should not reveal the confidences entrusted to him in the course of medical attendance—our laws recognize this, too, as "privileged communication." The doctor should maintain a discreet, professional silence on any deficiencies his findings may disclose in the character of his patients unless, of course, he is required to divulge these by law or such becomes necessary in order to protect the wellbeing of the individual or the community.

Finally, the *Principles of Medical Ethics* advise the doctor to be a balanced, socially-rounded individual. The doctor's professional and moral obligation carries the connotation of community responsibility and of being a part of constructive, useful activities carried on by his fellow citizens.

The unethical physician may conceal his misdeeds from colleagues, patients, or the public for a period of time or perhaps forever. But he can never conceal them from himself. If he has the conscience, the altruistic incentive, and the native ability to become a physician, then he is morally obligated to become a good and competent physician.

The true measure of greatness in a physician will never be terms of wealth, papers published, prominence, or high offices held in medical organization. Medicine's measure of greatness is a peculiar little yardstick about five hundred words long, the *Principles of Medical Ethics*. If this yardstick—used at any and all times during a professional life—fits personal moral and professional dimensions, then the measurement is that of a great physician.

CANCER MONTH

This is cancer month. Cancer is a master challenge because of its cruelty, but not the biggest challenge to the medical profession and to the citizenry of the nation. Arthritis cripples 11,000,000 per year, mental illness and cerebral palsy claim 10,000,000 victims each year, heart troubles account for 10,000,000, the dramatized polio, 100,000, and 38,000 violent deaths by automobiles, a quarter of a million since 1952. Cancer takes the blame for 750,000. With the means we have at hand nearly half the cancer cases can be saved if found and treated early enough. We have the problem of early diagnosis, sensible education against cancerphobia, and too much radiation and maybe too much surgery at times.

With continued concentrated effort on the part of the medical profession, the research laboratories, and the people, the cause of cancer will be found. In the meantime, let us diagnose cancer as early as possible and apply the best means of cure we have.

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Recurrent Severe Epistaxis

(CASE REPORT)

REUBEN H. McARTHUR, M.D.
Jackson, Miss.

I SHOULD LIKE TO present this case report for two reasons, first, I have never encountered exactly the same situation since I began to practice otolaryngology, and secondly, because even after reviewing the anatomy, more particularly the blood supply to the nose and nasopharynx, I am still unable to account for the persistence of severe epistaxis after increasingly drastic measures were taken step by step to control the bleeding. This is a case of a fifty-year-old white female who was first seen by me at 2:00 A.M., on June 11, 1957, at Mississippi Baptist Hospital. Her referring physician from another town had telephoned me earlier and stated that the lady had experienced sudden onset of severe epistaxis from the left nasal cavity approximately twelve hours earlier. He had inserted a tight anterior nasal pack which failed to control the bleeding whereupon he removed this packing and inserted a postnasal pack and reinserted a tight gauze anterior nasal pack. He stated that the patient had continued to bleed freely postnasally through the postnasal pack and anteriorly, and that she had been given 1500 cc. whole blood by transfusion during the twelve-hour period. I suggested that since the bleeding had been confined to the left nasal cavity, ligation of the left external carotid artery would be my next procedure of choice. However, he did not feel that he would like to go ahead with that procedure and sent the patient to Jackson by ambulance with a fourth pint of blood being given en route. Upon arrival at the hospital, active bleeding appeared to have subsided. The left anterior nasal packing was re-enforced and the situation seemed to be under control until 5:00 A.M., the following morning at which time I was called to the hospital to find that the patient was bleeding profusely through both the anterior and posterior nasal packs. On admission to the hospital the laboratory reported the blood count as follows: hemoglobin 11.8 grams—hematocrit 36. Blood picture otherwise normal. Repeat blood count at this time showed a drop in hemoglobin to 10.8 with a drop in the hematocrit to 32 volumes per cent. The patient was again cross-matched and 500 cc. of whole blood started immediately. She was taken to the operating room and under local anesthesia the left external carotid artery was isolated and ligated above the origin of the slightest diminution of bleeding and after approximately twenty minutes' observation it was decided that ligation of the left anterior and posterior ethmoid arteries would be required. These arteries were then ligated and severed with a bovie knife through a left curved nasal frontal angle excision, whereupon active bleeding subsided, however, the anterior and posterior nasal packs were left in place with the intention that they would be removed within approximately 12 hours. Since there was no further active bleeding, these packs were removed on the following day, June 13, 1957, without recurrence of epistaxis. The general condition of the patient at this time was fairly good, however, she had taken no nourishment and practically no fluids for forty-eight hours, hence, 1000 cc. 5 per cent glucose in saline was given intravenously on June 13, and I should mention that it was necessary to perform a cut-down just anterior to the tibial malleolus because of the condition of veins of the arms resulting from multiple transfusions. Following this infusion an additional 1000 cc. of 5 per cent glucose in distilled water was allowed to drip very slowly in order to keep the cannula patent for possible additional transfusions and fluids. It should also be mentioned that during the past forty-eight hours the patient had been given adrenosem intramuscularly, vitamin K intramuscularly every four hours, and had been given two ampules of premarin intravenously, and that following removal of the nasal packing topical thrombin solution was dropped into the nasal cavity at four-hour intervals.

On June 14, 1957, at 4:00 P.M., I was again called to the patient and found that she was bleeding just as profusely as before and that the bleeding continued to be confined to the left nasal cavity. At no time could an actual bleeding point be identified because of the profuseness of the flow and we were only able to determine that it came from the superior posterior portion of the nasal cavity probably on the septal side. Since the measures already undertaken were unusually drastic for the control of the usual epistaxis, I was in somewhat of a dilemma as to what steps should be taken at this time. The patient, of course, had

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*Presented before the Section on Eye, Ear, Nose and Throat at the ninetieth annual session of the Mississippi State Medical Association, Jackson, Miss., become extremely apprehensive and her nose was just about untouchable. Hence, she was again taken to the operating room where a general endotracheal anesthesia was performed despite the bleeding, and posterior and anterior nasal packing reinserted, however, it was obvious while still in the operating room that this measure was not sufficient to control the bleeding, and in desperation the incision in the left side of the neck was reopened to determine whether a possible anomaly of the left external carotid artery might have been overlooked or if possibly the ligature had slipped or even possibly the wrong artery had been ligated. None of these conditions was found to exist, hence, a second incision or rather a third incision was made on the right side of the neck and the right external carotid ligated in the usual manner. An additional 1000 cc. of whole blood was given through the cutdown and followed by 1000 cc. of 5 per cent glucose in saline. Both the anterior and posterior nasal packs were removed and no evidence of bleeding could be found. During these procedures the blood pressure which had been recorded as 122/80 on admission ranged down on several occasions to as low as 70/46, and her blood count despite multiple transfusions had dropped to 10.0 grams hemoglobin with a hematocrit of 28 volumes per cent. At 4:00 A.M. on the following morning June 16, 1957, I was told by the nurses the patient was again bleeding from the left nostril and you can imagine my consternation at hearing this report. I returned to the hospital and started an additional 500 cc. of whole blood through the cutdown, and returned the patient to surgery and under local anesthesia ligated the right anterior and posterior ethmoid arteries whereupon bleeding ceased immediately. There were no packs in the nose at that time. On the following day, June 17, the hemoglobin had dropped to 8.8 grams with hematocrit of 27 volume per cent and an additional 1000 cc. of whole blood was given by transfusion. On this date it became obvious that the patient had developed a phlebitis of the left arm and shortly after completion of the transfusion the left leg began to swell and became extremely painful, hence, it was necessary to discontinue the cutdown and begin local treatment of phlebitis of the arm and leg. Despite the fact that all of the primary arteries supplying blood to the nasal cavity and nasopharynx had been ligated, we were reticent to give anticoagulants as you might well imagine. Two days later, on June 19, the hemoglobin was reported at 9.3 grams and hematocrit at 31 volume per cent, and it was felt that additional transfusions were necessary, hence, a cutdown was performed in the other leg, and 500 cc. of blood given on this date. There had been no further bleeding following ligation of the right anterior and posterior ethmoid arteries, however, at this time on removal of the sutures from the neck both wounds broke open and the patient began to slough catgut sutures which, of course, brought to mind the possibility at this time that the black silk ligatures might also slough and result in uncontrollable bleeding from the carotid arteries. This event, I am happy to say, did not develop, and am just as happy to say that no further bleeding occurred. The patient's general condition improved rather rapidly, the phlebitis subsided, and she was discharged from the hospital on June 23, 1957, which was her twelfth hospital day.

Because of several experiences with previous cases who had required ligation of the anterior posterior ethmoid arteries in addition to ligation of the external carotid in order to control bleeding on one side I was about convinced that in the future it might be wise to ligate the anterior and posterior ethmoid arteries first, however, I could hardly go so far as to reconcile myself to the idea that the ethmoid and carotid arteries on the opposite side from the source of bleeding should be the first to be ligated. In this case, there was at no time any actual bleeding from the right nasal cavity as was stated earlier.

I cannot account for the bizarre pattern described above except to assume that unusually large or multiple anastomoses between the two sides must have existed.

Calipatria, Calif., Herald: "Today . . . we are being indoctrinated (taught something without really knowing all about it) by a group that have the most insidious plan for domination of the human race that the fertile mind of man has ever conceived. That plan is simply this: 'Not that we have been created equal by God, but that we shall be made equal by man.' We will all work under the same conditions, we will no longer have any problems, we will all have plenty to eat, we will all have a good house, a good car, a good television set, not necessarily because we earned them but because we are all equal and all deserve the same. We shall also think the same, worship the same, study the same things, dress the same, worry the same, and in the end we will all be the same, NOTHING."

Tetanus*

JOHN M. ALFORD, JR., M.D.
Greenwood, Miss.

Since 1955 there have been five cases of tetanus diagnosed at the Greenwood Leflore Hospital. One of these cases was an infant with the diagnosis of tetanus neonatorum who died after one day's hospitalization at the age of one week. The other four cases were adults. The most striking case reported in this group was a sixteen-year-old colored female who was admitted in very poor condition, exhibiting clonic-type seizures with the tonic seizures aggravated by jarring the bed. She was in respiratory difficulty and emaciated and had infectious, gangrenous conditions of both feet. The blood pressure and pulse were unobtainable on admission, and it was thought that the patient would die. The right extremity was placed in refrigeration anesthesia, and a tracheotomy was done. Because of the gangrenous condition of both feet, they were amputated at the midportion of the leg. This patient made a gradual recovery to full health, and prostheses were later applied.

There was one case of a 33-year-old colored male who had had a stab wound of the shoulder approximately two or two-and-a-half months prior to his illness. This was not considered a case of severe tetanus. This patient recovered on hospital treatment with tetanus antitoxin, sedation, and tolseram.

The fourth case was a colored male, age 13, who had stuck something in his foot about ten days prior to admission to the hospital. He exhibited the typical signs of tetanus with trismus, abdominal muscle rigidity, and gluteal muscle rigidity. He did not develop the convulsive seizures, and he was treated with tetanus antitoxin, sedation, and conservative management of the wound.

The fifth case was a case of a 65-year-old colored male who injured his right index finger two weeks prior to his admission. He had been ill about a week with stiffness in the neck. Trismus was a more recent onset. He exhibited the typical signs of tetanus and had had no convulsions, evidently. This was considered a severe case. The right index finger was amputated. Tetanus antitoxin was given. Sedation was maintained. Tube feeding was instituted. He was also given penicillin. This patient recovered.

In an article in the *Journal of Neurology* in 1954, Dr. Arthur L. Drew of the University of Michigan summarized the literature covering 195 separate papers on the subject with the following reports. He pointed out the extremely low incidence of tetanus during the Second World War and attributed this very low incidence to tetanus toxoid immunization. There were only twelve cases in the entire period in the U. S. Army personnel, and there were five deaths. This was including all the Army hospital admissions and 160,254 battle-wounded, only nineteen cases were tetanus. The civilian mortality rate is some twenty times the World War II service personnel mortality rate.

As you know, the organism Clostridium tetani is a spore-former and lives fairly universally in the soil and occurs in the excreta of man and horses. There are said to be nine agglutinitive types. All of these produce the same toxin, if any, which can be neutralized by the same antitoxin. The organism produces an exotoxin, tetanolysin, which is an hymolysin, and tetanospasmin, which is a neurotoxin. In a case of tetanus infection, excluding the localized wound, there are no perceptible pathological changes in the nerve, tissue, muscle, etc. It should be stated that it is not known how much toxin is being produced in a given infection, how long it will be produced, and if it is being produced continuously. Ranson suggests that the toxin acts directly on muscle as well as the central nervous system and points out that in the early stages of tetanus there is muscle rigidity, and it is not until late in the disease that clonic seizures and convulsions develop.

In the treatment of this disease it is possible to mass a great amount of experimental and clinical data with the purpose of showing the therapeutic efficacy, or lack of it, in certain types of treatment of tetanus, and particularly in the use of tetanus antitoxin. To draw fair conclusions about the results, one must know the detailed clinical course of a given case, the length of incubation period, interval before treatment, and the severity of the symptoms.

Tetanus antitoxin is definitely routine treatment in the case of tetanus, in doses of ten to thirty thousand units daily, for a period of two to four days. A newcomer to the treatment of tetanus is the use of curare, which is thought to block abnormal nerve impulses at the myoneural junction, and we have a method of maintaining curarization at a steady subparalysis level by the use of d. tubocurarine chloride and depot curare. Prostigmin is the antidote. Another new drug is myanesin which, when used, is thought to obviate the need for heavy sedation and is recommended.

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*Read before the 67th semi-annual meeting of the Delta Medical Society, April 10, 1957, Ruleville, Miss.

The choice as to whether or not tracheotomy is to be done depends on the severity of the case. The routine use of tracheotomy in all cases of tetanus, whether mild or severe, is not warranted.

One usually reads that surgical care of the wound should be conservative; but, since in clinical tetanus in man it is not known whether or not the toxin is being produced at a given time or at what amount or at what rate, a conservative approach to an active, localized wound infection is possibly not warranted. If a localized infection is responsible for a systemic illness with a very high mortality rate in severe cases, it would seem more logical to approach this radically. As has been stated in this paper, actual amputation of part of an extremity or digit was done in two severe-type cases. I might add a third case of amputation of a severely infected, gangrenous-type foot in an 18-year-old colored female, prior to the opening of the Greenwood Leflore Hospital. This was a severe type of tetanus which recovered. It can certainly be stated that the source of the exotoxin was definitely eliminated and that the only concern was the circulating antitoxin and the antitoxin fixed to nerve tissue, if it does so.

The over-all mortality rate of tetanus is approximately 50 per cent. The incubation period is less than seven days in one-third of the cases, less than two weeks in one-half of the cases. The range of the incubation period is from twenty-four to 239 days. In this particular disease we have a tool that would actually eliminate tetanus entirely or make it an extremely rare disease if properly used. None of these cases that I have reported had any history of having had tetanus toxoid.

The prophylaxis of this disease should be tantamount in the physician's mind; his energy and efforts should be expended in immunizing against this illness.

DISCUSSION

Dr. Fred M. Sandifer (Greenwood, Miss.) — I enjoyed Dr. Alford's instructive paper and appreciate discussing it. Dr. Alford has shown by illustrative cases the importance of surgical care of the wound, removing the site of manufacture of tetanus toxin, even if amputation is necessary.

An interesting report from Cook County Hospital in 1955 reports twenty-two cases of tetanus in a twenty-month period. Of these, twelve cases were in heroin addicts who had contracted the disease by using contaminated needles. All the twelve addicts died, 100 per cent mortality. Of the remaining cases, 40 per cent died. All cases received standardized treatment. A fact to be considered is that the addicts had received no local treatment of wound as there was no way of knowing which site of injection was responsible since there were numerous injections made during the days of incubation period.

Practically all cases of tetanus neonatorum occur in infants born outside a hospital, usually delivered by mid-wives. This is true in the case reported by Dr. Alford.

Prophylaxis of tetanus is most important. In a tetanus-prone wound, that is, a wound potentially contaminated with tetanus spores, careful débridement, removal of foreign bodies, is a must. If the injured has had tetanus toxoid series and a booster dose within five years, a dose of tetanus toxoid is indicated. If no booster dose has been received in five years, then fifteen hundred to three thousand units of tetanus antitoxin and a booster dose of toxoid given in different sites is indicated. All veterans of the last two wars and most children born since 1937 have had tetanus toxoid series. If the injured has never had a series of toxoid, then it is an opportune time to start the toxoid series, giving the toxoid and antitoxin at different sites.

Tetanus antitoxin may cause reaction in people sensitive to horse serum. If the wound can be well cleaned, and a reaction to tetanus antitoxin is likely, then omit giving the tetanus antitoxin and give tetanus toxoid and antibiotics. In most communities, the risk of developing tetanus from a trivial wound is small. Serum of individuals with a high antitetanus titer may be used to treat tetanus cases sensitive to horse serum.

FIFTY-YEAR CLUB

The Fifty-Year Club will hold its annual luncheon during the state meeting on Tuesday, May 12, at 12:30, in the Buena Vista Hotel. Dr. B. L. Crawford will preside as president. Dr. A. L. Gray has been asked to serve in the place of the late Dr. Felix J. Underwood as recording secretary. The club will be entertained by a beloved member of the group. Make your plans to be present.

Mr. Roland Kennedy is making arrangements for the luncheon.

Medical Center Miscellany

The University Medical Center will institute a series of Postgraduate Educational Circuit Courses in the 1959-60 academic year.

As presently planned, an afternoon program will be presented once each week for four consecutive weeks in six Mississippi cities.

The Medical Center is adding the circuit courses to its present continuing medical education program because it recognizes that both distance and the problem of patient coverage are major attendance deterrents for many physicians.

"We feel that the Medical Center has an obligation to provide all possible assistance to physicians who wish to augment their training by participating in postgraduate courses," says Dr. L. F. Rittelmeyer, chairman of the UMC Postgraduate Education committee.

"Studies reveal that more than a thousand of the state's practicing physicians live within a 30-mile radius of the six cities selected to host the course in each area," Dr. Rittelmeyer reports. The advice of the component medical society was invited in choosing the city when more than one possibility presented itself, he continues.

Preparations for the courses, still in the preliminary stages, call for a series of four-hour sessions to be presented by the departments of surgery, medicine, preventive medicine and pediatrics combined, and obstetrics-gynecology.

It is anticipated that each program will include three lectures, a panel discussion, and a question and answer period. The three lectures will be named by the departments concerned and may be either full-time or clinical faculty members.

Chairmen of the various departments are working with members of the Postgraduate Education Committee to develop the complete program.

Committee members directly concerned with this phase of the course are Dr. Watts R. Webb, associate professor of surgery; Dr. Fred Allison, Jr., associate professor of medicine, Dr. Rittelmeyer, associate professor of preventive medicine, and Dr. C. G. Sutherland, clinical assistant professor of obstetrics-gynecology.

It is expected that speakers will also be drawn from other departments such as radiology, anesthesiology or the basic sciences.

The tentative schedule of cities and dates is as follows:

Tupelo, each Wednesday afternoon beginning October 28 through November 18.

Greenwood, each Thursday afternoon beginning October 29 through November 19.

Gulfport, each Wednesday afternoon beginning January 13 through February 3.

Hattiesburg, each Thursday afternoon beginning January 14 through February 4.

Meridian, each Wednesday afternoon beginning March 9 through March 30.

Jackson, each Thursday afternoon beginning March 10 through March 31.

Both the Mississippi State Medical Association and the Mississippi Academy of General Practice are cooperating with the University Medical Center Postgraduate Education committee in presenting the program which will be held in local hospitals wherever possible.

The Circuit Courses are supported by a grant from E. R. Squibb and Sons. Detailed programs will be sent to each physician in the state.

Ancillary Courses

Two courses for paramedical personnel will be held at the Medical Center this spring. The first is a one-day Cardiac Nursing Seminar to be held on April 24. The second is a Conference on Methods of Helping Parents with Pregnancy, Childbirth and Breast Feeding, scheduled for May 15. Physicians are urged to encourage nurses in their areas to attend these programs.

The Cardiac Nursing Seminar is sponsored by the School of Nursing and the Mississippi Heart Association. Dr. James Ward, Dr. Arthur Guyton, Dr. J. Manning Hudson, and Dr. Watts Webb, all of the medical school faculty, will lecture during the morning. They will review the anatomy and physiology of the heart, fluid and electrolyte balance in heart disease, medical management of acute heart disease and surgical possibilities in heart disease.

During the afternoon, Miss Barbara Montgomery, assistant professor of nursing at Emory, will talk on nursing care of the hospitalized heart patient. Miss Lee Gilmer, associate professor of nursing at Vanderbilt, will discuss nursing care of the heart patient in the home.

Both registered and practical nurses may attend and student nurses are also invited.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

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CARDIOLOGY

Direct Vision Coronary Endarterectomy for Angina Pectoris — W. P. Longmeyer, Jr., J. A. Cannon, and A. A. Kattus, *New England Journal of Medicine,* Vol. 259, pg. 993.

The authors report their first five patients who, suffering incapacitating anginal pain, have been subjected to coronary endarterectomy under direct vision. The etiology of the angina in all cases was coronary arteriosclerosis and the criterion for selection was simply typical clinical angina pectoris without definite evidence of myocardial infarction. These patients were selected for surgery in the hope that the earlier cases of symptomatic coronary artery disease would be able to stand the stress of the operation better than the older cases with extensively damaged hearts as the result of single or multiple myocardial infarction. It was also expected that this early group of patients would exhibit maximal symptomatic improvement, following the increase in the flow of blood to the undamaged myocardium. In all of the patients it was possible to remove at surgery an almost totally occluded thickened intimal core from one or more of the coronary arteries and to establish by direct vision the blood flow through the vessels at the time of the operation. Asystole occurred near the completion of the operation in one patient who died in spite of vigorous application of all resuscitative measures. The four surviving patients, who were followed for two to three months postoperatively, showed rather marked improvement in the EKG tracings, which were obtained following exercise. Two of the four patients have been completely relieved of their angina pains. The others have obviously greatly improved as shown by the reduction of frequency and intensity of the anginal attacks. It is thus technically feasible by a direct vision coronary endarterectomy to reestablish the blood flow in previously obstructed major coronary arteries.

Comment: Two requirements for such a definitive attack on the coronary arteries are 1. Some form of coronary angiographic delineation prior to surgery in order to outline the extent and localization of a coronary artery obstruction. 2. A mechanical heart, allowing time and a quiet dry surgical field for the surgeon. Both of these prerequisites have been obtained and it is my opinion that this type of surgery will, in its further development and extension, be the most important surgical approach since the initial attack on congenital heart disease. These patients must be seen by the surgeon early; if this is done, I believe that long-term followup results will be quite encouraging.

PEDIATRICS

Commentaries Therapy of Salicylate Poisoning. The Journal of the American Academy of Pediatrics, Inc., Vol. 23, No. 2, February, 1959.

Salicylate intoxication presents as complex a metabolic disturbance as the doctor is likely to be called upon to treat. This disorder is frequently accompanied by a) one of several disturbances of acid-base equilibrium, b) depletion of body potassium, c) fever, d) disturbed mental state and coma, e) bleeding due to hypoprothrombinemia, thrombocytopénia, or to other causes, and f) variable degrees of dehydration. In very severe cases, acute pulmonary edema, respiratory depression or acute renal failure may occur.

The typical disturbance in children is a mixed state involving primary respiratory stimulation, manifested by hyperventilation and a primary metabolic disturbance, manifested by ketosis.

In contrast to the mixed disturbance, respiratory alkalosis unaccompanied by any discernible primary metabolic disturbance is the usual picture in older children and adults. Secure diagnosis of the particular acid-base abnormality demands measurement of whole blood pH as well as total CO_2 content of the plasma.

Evaluation of the Efficacy of Lavage and Induced Emesis in Treatment of Salicylate Poisoning. By Franklin J. Arnold, Jr., M. D., John B. Hodges, Jr., M. D., Irving Sunshine, Ph. D., Rudolph A. Barta, Jr., in collaboration with Samuel Spector, M. D., and Ralph J. Wedgewood, M. D.

Department of Pediatrics and Pharmacology, Western Reserve University School of Medicine and Cuyahoga County Coroner's Office

Studies in experimental salicylate poisoning were carried out to ascertain the therapeutic value of gastric lavage and to compare it with the effect of emesis. The date indicated that in the recovery of ingested salicylate. 1) Initial aspiration of the stomach before introduction of fluid is equally as important as succeeding lavage. 2) Lavage carried out within 15 minutes is no more effective than emesis inducted within 30 minutes of ingestion; 3) lavage carried out 1 hour after ingestion is inefficient and far less effective than emesis produced within the same time interval. 4) Spontaneous emesis is not as effective as induced emesis. 5) Emesis induced immediately or even when delayed as long as 1½ hours after ingestion, appears to be the more effective and thus the preferable form of therapy.

General Measures. The initial rehydrating infusion should be isotonic with respect to sodium. In patients with acidosis, a fluid similar to normal extracellular fluid with respect to sodium choride and bicarbonate is appropriate; in alkalotic patients, all sodium should be given as sodium chloride.

Following restoration of the volume of the extracellular fluid and resumption of normal renal function, repletion of potassium deficits should be started. Liberal quantities of water, electrolyte and carbohydrate should be provided to cover large maintenance losses. Serial study of the electrolytes in the serum is most helpful in judging adequacy of therapy.

Vitamin K_1 oxide should be given for hypoprothrombinemia; whole blood transfusion (with precautions to insure viability of platelets) or platelet transfusion is recommended for thrombocytopenia. Vitamin C should also be given.

Measures Designed to Rid the Body of Salicylate. It is well known that the rate of excretion of free salicylate is markedly increased in an alkaline urine. For this reason, alkalinizing the urine has been recommended as a therapeutic measure. To attempt to achieve this by administration of large amounts of sodium bicarbonate or sodium lactate is contraindicated.

Recently the use of an inhibitor of carbonic anhydrase, acetazolamide (diamox), has been recommended as a method of alkalinizing the urine in patients with salicylism. Although it is probable that patients with alkalosis would respond to this drug, it is questionable whether patients with acidosis would do so. Furthermore, to the extent that a positive response was obtained, excretion of bicarbonate would increase and bicarbonate in the serum would decrease; the latter effect would tend to produce an independent cause of metabolic acidosis superimposed upon an already complex disturbance. Finally, a positive response would be accompanied by an increase in the excretion of sodium and potassium, thus further complication replacement of deficits of these ions. In the absence of definitive clinical and chemical data on the use of acetazolamide in children with clinical salicylism, the indiscriminate use of this drug cannot be recommended.

In severely poisoned cases, extracorporeal dialysis may be a valuable therapeutic procedure, particularly if it is carried out early. Exchange transfusion or peritoneal dialysis may also be effective, although they are less efficient.

Treatment of Complications. Acute pulmonary edema should be treated with oxygen and aminophylline and perhaps with digitalization using a rapidly acting glycoside; morphine should probably be avoided. Respiratory depression should be managed with the use of some means of artificial ventilation in an atmosphere of oxygen and preferably with laboratory control of pCO_2.

COMMENT

Accidents and poisoning now produce the highest number of deaths in children. One of the most common problems is aspirin poisoning. Early and adequate treatment is essential. Physicians should constantly keep in mind their duty to educate parents as to the possibility of aspirin poisoning in their child so that they will keep the candy flavored or even plain aspirin out of reach of children. Physicians should also keep in mind that it is possible to overdose with aspirin.

STATE MEETING

In May our State Medical Association will meet in Biloxi, anticipating the largest attendance in its history. The program will be good and every doctor should attend his state meeting if possible—for medical edification, for social inspiration, and for active participation.

The atmosphere on the Coast is invigorating, favored for vacationing, and the Buena Vista Hotel is well arranged for a convention.

Medicine on the Coast is on the up and up. Hospital facilities are moving along and the professional spirit is good. When we think of the Coast we think of our surgical sage, Dr. E. C. Parker, his special young friend, Dr. C. D. Taylor, and Dr. B. B. O'Mara, perpetually vigilant and active hosts.

Mark your calendar for the second Tuesday in May and turn your face to the Coast.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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CONTROL OF CHARITY, A COOPERATIVE EFFORT*

(Guest Editorial)

The control of charity is or should be a cooperative effort on the part of the hospital and members of the medical staff. By control we do not mean avoidance, and certainly no physician in Mississippi would endorse an effort on the part of any hospital to avoid free services. Proof of this is the insistence of the physicians of the state of Mississippi that though the state may contribute toward cost of hospitalization of the indigent patient, the physician shall not accept fees from such patients, nor is he interested in accepting fees from the state in behalf of the patient.

There are many, mostly rather obvious, reasons why the physician should be interested in assisting the hospital in its efforts to control charity services and there are just as many concrete measures which the physician can ethically employ to bring about a reduction in the volume of charity services the hospital (and that is to say, the community, county, state, and pay patients) is faced with financing.

This may seem a rather trite statement to make, but there is no such thing as free service. The administrator and physician should keep this constantly in mind. We administrators could and should do more to educate the charity patient to this fact, also. Someone foots the bill for the charity patient whether it be the city, county, state, federal government, pay patient, or any combination of the five.

If the pay patient foots the bill (heaven help him) the charges may become exorbitant and pay patients forced into a classification of charity or part-pay.

To the extent that any subdivision of government is placed in the position of subsidizing unnecessary charity services we are unnecessarily forcing a tendency toward socialized medicine.

It is generally recognized, we believe, that it is the responsibility of the hospital's administration to see that every charity applicant is thoroughly screened. This is not to suggest that the interested physician's recommendation should be discouraged as the physician often is well acquainted with the financial status of the patient. On the other hand, final determination of the status of the patient should rest with the hospital. And it is my belief that most physicians prefer to leave this burden of investigation upon the hospital when the hospital does a reasonably acceptable job of investigation.

In most hospital situations we believe the physician can reduce the volume of charity services rendered by his hospital in several ways, neither neglecting his responsibility to the patient nor adding appreciably to his own already heavy burden.

The three following simple principles would, I believe, reduce charity patient days by at least 10 per cent, which would be of tremendous assistance to the hospital and would ultimately be reflected in over-all improved patient care: (1) In elective cases, if the prospective or potential charity patient were sent to the hospital to make prior arrangements several days before anticipated admission, the hospital would have an opportunity to make arrangements which often would prevent the necessity of charity. (2) When at all possible, the charity patient should be admitted the day before scheduled surgery just as though he would be a pay patient. The practice of admitting a charity patient and then scheduling a convenient time for surgery should be strictly limited. (3) Avoid "shooting the works" just because a "free" work-up is available. (4) Avoid allowing patients any longer period of time for convalescence in the hospital (because it is "free") than would be allowed the patient paying his own way.

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*By Mr. E. B. Sledge, administrator of the Greenwood Leflore Hospital, Greenwood, Mississippi.

There is no doubt that a survey of hospitals in the state would prove that the average stay of a charity patient is over twice the stay of the average pay patient. The hospital administrator is well aware of several obvious justifications for longer stays for the charity patient. The necessity for a longer stay is sometimes the cause of the patient's having to be classified as charity, in fact.

On the other hand I think we all, administrators and physicians alike, will agree that the average stay of charity patients could be reduced.

In return for cooperation with the hospital, the opinion of the physician should be respected at the time the pay status of a patient is being determined—for after all, *only* the physician is making a *personal* sacrifice of time and loss of compensation when a charity patient is being rendered services.

WHO IS TO BLAME?

The high cost of illness is being increasingly played up in the press. The hospital is receiving the larger portion of the blame at this time, but doctor fees, high cost of drugs, et al, will have their day soon no doubt. Medical care may be too high, but it is not the only product on the market for sale for human consumption. From breakfast bacon to shoes for the foot, high cost of living evinces inflation, and it is mighty expensive to be buried.

The march of medicine has been very fast. Likewise rapid travel has been expensive, but who would say it is not worth the cost? We lead in the number of automobiles, yet we utilize them to a good advantage. We believe that the public also recognizes the value of the best medical service, and is willing to pay the cost if possible.

The cost of an automobile may be itemized part by part. The cost of a medical education, nurse training, hospital construction and maintenance, research laboratories, and all utilities have not been as clearly defined in the mind of the layman.

All who are directly concerned in the administration of medical service need to study the high cost of illness in all of its phases with the desire to give better service at less cost if possible. Unbiased study and willingness to give value for value are requisite. Some doctors have fees that are too high; inefficiency in hospital administration causes per diem costs to be unreasonable. Voluntary hospital insurance has been of the greatest value in securing the very best medical service, but the person who plays his insurance to make money while he is sick further complicates the problem of illness. When the charity case is kept several days longer than is necessary in the hospital while the institution loses money on him, the total cost of illness increases unnecessarily.

Let us come and reason together seeking how we may give better medicine for less cost.

NEW HEALTH ORGANIZATION

We note with the organization of the Mississippi Psychiatric Society. It marks a new milestone for us. Mental health is most important. Our state is moving upward and onward in this field. Our hospital at Whitfield, headed by Dr. W. L. Jaquith, is favorably known across the nation. This month we begin our fund-raising for mental health.

NORTHEAST MISSISSIPPI SOCIETY

The March meeting of the Northeast Mississippi Medical Society met in Tupelo. The new president, Tom Braddock of West Point, a native of Tippah County, presided. Dr. George Miller of West Point presented a paper on cardiac arrest. The guest essayist was Dr. C. G. Sutherland of Jackson, who talked on "Clinical Approach to Ovarian Tumors."

Highlight of the meeting was the presence of our state president, Dr. Guy Vise of Meridian, and our executive secretary, Mr. Rowland Kennedy of Jackson. Both made nice talks, informative and inspirational. Dr. Stanley Hill, president-elect of the State Medical Association, is a member of the society.

Horton G. Du Bard, M.D., announces the opening of his office for the practice of general surgery in Suite 501-B, Baptist Medical Building, 20 South Dudley Street, Memphis, Tennessee.

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References: 1. Miller, J.H., et al.: Am. J Dig. Dis. 3:229-231, 1958. 2. Swartzwelder, J. C., et al.: A.M.A. Arch. Int. Med. 101:658-61, 1958. 3. Frye, W. W., et al.: Am. J. Trop. Med. Hyg. 6:890-893, 1957. 4. Swartzwelder, J C., et al.: J.A.M.A. 165:2063-67, 1957.

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DR. J. P. FATHERREE

Funeral services were held February 24 for Dr. John P. Fatherree, 51, superintendent of South Mississippi Charity Hospital in Laurel for the last 12 years. He died of a heart attack at his home.

A native of Hazlehurst, he also owned Woman's Clinic in Laurel.

He was a fellow in the American Academy of Obstetrics, the American College of Surgeons, the International College of Surgeons, and a member of the American Academy of Obstetrics and Gynecologists, the Mississippi Association of Obstetrics and Gynecology, the South Mississippi Medical Society and the Jones County Medical Society.

Dr Fatherree received his M.D. degree from Tulane University School of Medicine in 1939.

Survivors include his widow and four children.

DR. K. P. WOOD

Dr. K. P. Wood, 78, longtime Lena physician and father of two Jacksonians, died at the Leake County Memorial Hospital in Carthage, January 27, after a long illness.

He was a graduate of the Memphis Medical College and had practiced medicine in Lena for 38 years. He was a member of the Lena Methodist Church, Woodmen of the World, the Central Mississippi Medical Society, a Mason, and a member of the staff of the Leake County Memorial Hospital.

Survivors include his wife; three daughters, Mrs. Billy Denson of Tuscola, Mrs. Bradford Denson of Carthage, and Mrs. Frank Hamilton of Schlater; four sons, Dr. Frank A. Wood of Jackson, Harley A. Wood of Jackson, K. P. Wood, Jr., of Mt. Pleasant, Mich., and Sgt. James P. Wood of Keesler Air Force Base; three sisters, Mrs. Velma May of Memphis, Mrs. Lena B. Thompson of Biloxi, and Mrs. W. D. Andrews of Clinton, La.; and three brothers, Rev. H. A. Wood of Meridian; W. H. Wood of Tulsa, Okla., and P. D. Wood of Joiner, Ark.

DR. JOHN HARRIS

Dr. John A. Harris, retired Tallahatchie County physician, died January 13 at a Jackson nursing home. He was 85 years old.

Dr. Harris was born in Chickasaw County and received his medical education at the University of Nashville. He had practiced in Tallahatchie County for 40 years.

Services were held at the Webb Baptist Church.

He leaves three brothers, Tom M. Harris of Houlka, Dr. W. Robin Harris of Jackson, and Dr. J. Harley Harris of Memphis, and a sister, Mrs. Laura H. Pearson, of Laurel.

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The MISSISSIPPI Doctor

6 THE MISSISSIPPI DOCTOR, MAY, 1959 NO. 12

Ill-health, of body or of mind, is defeat . . . Health alone is victory. Let all men, if they can manage it, contrive to be healthy.

—Sir Walter Scott

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SEARLE

Menopausal and Postmenopausal Bleeding*

JOSEPH HYDE PRATT, M.D.
Section of Surgery
Mayo Clinic and Mayo Foundation†
Rochester, Minnesota

IN DEFINING the postmenopausal state we arbitrarily use six months of amenorrhea after the last menstrual cycle as the time when the postmenopausal period begins. Some physicians use two years of amenorrhea, others may use one year to establish the beginning of the period. Occasionally the menopause begins when a woman is in her thirties, but most women are in their mid-forties and early fifties; the postmenopause begins at whatever age the menses cease, regardless of the chronologic age of the patient.

Changes in bleeding such as an increase in amount of flow, prolongation of the menses, or spotting or bleeding between the menses are considered as irregularities of menses in a patient who is approaching or who is in the menopause with its associated vasomotor difficulties. All of these variations are encountered and all are, to some extent, abnormal. The normal menopause would be a cessation of menses with no further flow or a gradual decrease to cessation and nothing further. Conscientious consideration is required to attempt evaluation of problems of minor irregularity.

Fortunately, most of the menopausal irregularities are variations of the interval between menses or in the amount of menstrual flow, and if only one or two cycles show variation, they can probably be disregarded. However, when the irregularity is a definite prolongation of the menses, a dragging out of the time of flow, or if there has been intermenstrual bleeding, then additional investigation is indicated. Vaginal bleeding, after a period of amenorrhea lasting several months, is of even greater importance and a warning note of potential danger. Whether the bleeding is an abnormality of the menopause or whether it is due to an organic lesion it can, in either case, vary from minimal spotting to persistent bleeding with secondary anemia to a serious hemorrhage. Nor is there any way to estimate, from the amount of blood lost, the seriousness of the underlying cause. Also, since many women assume that spotting, bleeding and discharge are a part of the menopause, they delay far too long before coming to a physician.

The first point to be considered is the menstrual history in order to provide a background for the present complaint. Answers to the following questions should be sought: How regular have the menses been? What has been the average duration and amount of flow? Have periods been skipped? Have there been episodes of metrorrhagia or ovulatory bleeding? Has the patient had any dysmenorrhea and, if so, has it become worse? Has there been any recent suspected pregnancy?

Then the story of the present episode should be considered—whether its onset was acute or gradual, the duration and the amount of bleeding; whether the episode seems to be true metrorrhagia or just an irregular menstrual period; whether there were any precipitating events such as nervous shock, accident, long automobile trip, change in altitude and so forth.

Other factors related to the history may have considerable bearing on the problem. Heredity may be a factor, and the patient should be asked when her mother or perhaps an older sister started the menopause. It does not establish a definite time but there is a family tendency for early or late menopause. If there is a strong history of cancer in the immediate family, the physician must be especially suspicious of any abnormal bleeding or discharge. Hormones may be a factor. Hormones have been used far too indiscriminately in many conditions and for many symptoms. Also, there is a tendency to allow patients to continue on medication indefinitely. As a side effect, these patients may bleed; however, even though the history indicates hormone medication which could account for the bleeding, one should always beware of endometrial carcinoma that may start up coincidentally.

When the menopausal patient complains of irregularity or prolongation of menses, the most likely difficulty is decreased cyclic stimulation from the ovaries and, therefore, irregular bleeding of the uterus, a condition that will cure itself when the ovaries cease to function enough to stimulate the uterus. Nor will the patient die if we wait for this optimal result, but all the other patients who have malignant lesions will either die from neglect or lose their opportunity for arresting or curing an early malignant disease.

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*Read before the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 11-16, 1959.

†The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.

ORIGIN OF IRREGULAR BLEEDING

The patient should always be examined when abnormal bleeding has occurred. Although patients seem to think that any bleeding precludes a pelvic examination, actually examination of the patient at such a time may be most helpful in locating the source of bleeding. Senile vaginitis and cervicitis are common causes of postmenopausal spotting, but if a trickle of blood is coming from the cervix, obviously the patient needs curettage regardless of the amount of vaginitis that may be present. Such senile changes are due to thinning and atrophy of the vaginal mucosa, and often there is a thin leukorrhea with occasional spots, flecks, or streaks of blood. If adhesions form and are broken by the trauma of coitus or a pelvic examination does not disclose a source of bleeding, she can be examined again on her next visit. By that time any laboratory studies deemed necessary will have been done and the results will afford an even greater chance of finding the site of the bleeding.

It may be difficult to determine where the blood originates. It is all right for the patient to say the blood came from the vagina and she is probably correct, but the physician cannot assume this to be true. He must prove it to his own satisfaction. The patient should be on a table and a good strong light should be used to illuminate the perineum, because the source of bleeding might be a lesion on the vulva or a fissure at the posterior fourchet, or even a hemorrhoid. The vulva is easily inspected and specimens for biopsy should be obtained from any regions which arouse suspicion of disease. The urethra is not an uncommon source of spotting, especially if the blood is found principally on the toilet tissue; in fact a carbuncle may be the real difficulty. The easiest way to be reasonably sure that the source of the blood is within the vagina is to insert a tampax in the vagina and leave it for a few hours. If the blood is on the inner end of the tampax the bleeding is obviously from the posterior part of the vagina or the cervix, or it is coming through the cervix. If the blood is only on the outer end of the tampax, the blood must originate from the introitus, labia, urethra, or anal area.

Cervical Lesions—If the blood comes from the vagina, the commonest source which is not endometrial is a lesion of the cervix. The menopausal patient is also in the age group when carcinoma of the cervix is encountered most frequently. Inspection and palpation of the cervix and additional help from cervical smears should give a hint of the presence of malignant disease with proof obtained by biopsy of specimens from any questionable or elevated regions.

Chronic cervicitis often causes a great deal of discharge but it seldom causes any more than post-traumatic spotting. Cervicitis does cause bleeding and it is a benign condition, but it can be diagnosed as benign only after the pathologist has had a chance to examine sections from the cervix. This emphasizes the necessity not only of obtaining specimens for biopsy from all patients with cervicitis, but also of using care and patience to obtain multiple specimens for biopsy from representative regions and to refrain from cauterizing the cervix until the pathologic report has been obtained. With such a program the physician is not faced with the situation which obtains when the pathologist, on the basis of a 3-mm. piece of tissue, reports carcinoma "apparently in-situ," and requests more tissue in order to exclude, if possible, a diagnosis of invasive cancer. If the physician is unable to furnish more tissue because the cervix has been extensively cauterized, he is also hard-pressed to advise simple hysterectomy with preservation of the ovaries and a prognosis of 99 per cent cure, or Wertheim hysterectomy, or radiation to the cervix for a possible serious invasive malignant lesion with a considerably poorer prognosis. If the patient's cervix has prolapsed sufficiently to protrude from the vagina, ulcerations owing to rubbing on the clothing frequently cause spotting or soiling. Such ulcerations can be inspected readily and are uniformly benign; in fact, carcinoma of the cervix is rare in the patient with procidentia.

Cancer of the Vagina.—A rare condition that should be mentioned is cancer of the vagina. If a patient has been wearing a pessary, especially if she has used one for a long time without removal, the vaginal mucosa may be ulcerated and granulation tissue may be the cause of bleeding. The lesions and the surrounding inflamed tissue often look and feel like a malignant lesion, but biopsy readily distinguishes the two.

The case of a patient with a vaginal lesion recently seen at the Mayo Clinic illustrates the importance of a complete examination performed in a routine manner.

REPORT OF CASE

A patient in her late forties had been going to her home physician for 11 months concerning vaginal discharge with occasional streaks of blood. Salves, ointments, hormones and light cautery to the cervix were used but the condition became worse and the discharge became more odorous until finally she went to a physician in a neighboring town. He took the history, did a pelvic examination and in addition to visualizing the cervix, he also did a rectovaginal examination. He promptly found a large ulcerating carcinoma of the rectovaginal septum with lateral fixation. The patient was then referred to the Mayo Clinic for radiation therapy. Investigation disclosed that the tumor had been missed originally because the first physician had had a nurse place the patient on the table and put the speculum in place so that he could examine the cervix. The posterior blade of the speculum covered the early lesion in the rectovaginal septum and since the cervix was clean, bimanual examination seemed unnecessary. Fortunately, such oversights are becoming rarer, although we occasionally see a patient with carcinoma of the cervical stump three to six months after she has had subtotal hysterectomy. On questioning we elicit the fact that the surgeon never palpated or inspected the cervix prior to operation.

CERVICAL POLYPS

The small, obiquitous cervical polyp is usually a symptomless adenomatous polyp of which perhaps one in 200 or 250 is malignant; therefore, all of them should be removed and examined microscopically. Cervical polyps are one of the commoner causes of menopausal spotting and may cause premenstrual or postmenstrual metrorrhagia as well as post-traumatic spotting. It is well to probe the endocervical canal when a polyp seems to arise just within the cervical os. If an endocervical malignant lesion is present, blood usually will appear on the swab.

ENDOMETRIAL POLYP

More dangerous and difficult to distinguish is the endometrial polyp presenting at the cervix. Such a polyp is more likely to be carcinomatous and more of them may have developed inside the uterus. There is no reason why a small cervical polyp cannot be removed as an office procedure, but a large polyp or one that seems to be coming from high in the canal should be removed with the patient under anesthesia. Curettage should be done at the same time to exclude the possibility of further polyps higher up in the uterus.

FIBROMAS

Fibroid tumors that are large, knobby and easy to feel are, of course, the ones that seldom cause symptoms; they grow on the exterior of the fundus and all physicians have seen fibroids that weighed pounds but did not cause any symptoms. The small submucous fibroid is the type that accounts for and causes menorrhagia, metrorrhagia and similar conditions as well as frequently causing severe anemia. These small fibroids cannot be felt on bimanual examination but they must be sought for on curettage; often they are small enough to be caught in a curette or a curved forcep and removed through the cervix. Because fibroids are palpable is no reason to assume that a fibroid is causing the bleeding. An associated carcinoma may be the cause and this possibility must be excluded.

It is difficult to believe that fibroids migrate or change position after the menopause, but we occasionally see a patient who has fibroids which are causing postmenopausal bleeding and find them to be submucosal or actually in the endometrial cavity. If the patient has not had a history of menometrorrhagia before the menopause, one wonders if the endometrium and the myometrium have atrophied and left the fibroid more exposed than it was previously.

The prolapsing fibroid can be easy or extrémely confusing to diagnose. If it is small and on a pedicle, removal may be simple. If it is large and fills the cervix, or if it is ulcerating with a foul discharge of pus and blood, only the rim of the cervix about the fibroid may give an inkling as to the nature of the mass. Such fibroids ulcerate on their lower surface and some cause severe and prolonged bleeding and serious anemia. The necrotic fibroids should be removed vaginally, and the patient should be treated with antibiotics for several days as the discharge decreases, whereupon hysterectomy can be performed.

CARCINOMA OF THE FUNDUS

The possible existence of carcinoma of the fundus should be considered even in women in their forties because the results of surgical treatment are so satisfactory when the lesion is in an early stage. Most of the carcinomatous lesions of the fundus are low-grade adenocarcinomas; they may be small and slow growing and the patient may even have a history of prolonged bleeding, but the prognosis after surgical therapy is frequently excellent. The procedure of choice is, of course, to establish the diagnosis by study of frozen section of tissue removed by curettage. The uterus should then be packed with gauze and the cervix sutured to prevent spillage of cells into the vagina. The vagina can be scrubbed again with soap and water and abdominal hysterectomy should be performed immediately. A high percentage of "cures" and short hospitalization can be expected.

MALIGNANT LESIONS OF THE FALLOPIAN TUBES

If vaginal examination gives negative results and biopsy of cervical and uterine specimens is not helpful, then rectovaginal examination should be done while the patient is under anesthesia. Malignant lesions rarely develop in the tubes, but a mass, especially a semisolid, elongated one extending laterally from the horn of the uterus, should arouse sufficient suspicion to lead to exploration.

A watery, especially intermittent discharge, that is possibly tinged with blood or is serosanguineous, is said to be pathognomonic of malignant disease of the tubes. However, this condition is one of the extremely rare genital malignant diseases and is most unlikely to be the etiologic agent. If the results of all examinations are negative and yet the bleeding persists or recurs, abdominal exploration or hysterectomy must be considered to exclude such rare conditions.

TUMORS OF THE OVARIES

Any malignant or benign tumors of the ovaries may cause uterine bleeding or spotting. Probably 20 to 25 per cent of ovarian neoplasms will cause some bleeding at some stage of their growth, some apparently by stimulation of the endometrium, others by leakage through the tube, and still others by metastasis to the endometrium and bleeding from the metastatic lesions.

The menopausal and postmenopausal years are not the years when corpus luteum or follicular cysts are expected to develop; therefore, if an ovarian cyst is delineated that is more than 5 cm. in diameter, exploration is justified.

PREGNANCY

Finally, in dealing with menopausal patients one should never assume that such a patient *could not* be pregnant or that her bleeding might not be the result of an incomplete abortion. Granted that pregnancies after a woman is 45 years of age are uncommon, and that they are extremely rare if she is more than 50 years of age, still the incomplete abortion, retained placenta, or hydatiform mole occasionally will be found to the consternation of both patient and physician.

POSTMENOPAUSAL BLEEDING AND MALIGNANT DISEASES

Rate of Incidence.—Statistically postmenopausal bleeding is a more serious condition than the irregular bleeding that may be encountered at the menopause. It is impossible to determine how many postmenopausal patients have or will have a malignant lesion with bleeding as one of the symptoms. One author[1] stated categorically that all authors will agree that 65 to 75 per cent of the patients who bleed after the menopause have a malignant lesion, and that the type and amount of the bleeding is of no diagnostic significance. Such a statement is misleading and actually few would agree with it.

Cheek and Davis[2], in 1946, reported on 514 cases of postmenopausal bleeding with at least two years of amenorrhea in each case. Malignant lesions were found in 36.1 per cent of the 514 patients and they were located in all genital organs: vulva, urethra, vagina, cervix, fundus, tubes and ovaries. In 10 other papers written between 1930 and 1941 and concerning series of 98 to 782 patients, they also reported rates of incidence of malignant disease in postmenopausal bleeding patients from 53 to 90 per cent; however, all but two of the authors reported rates of incidence of 53 to 68 per cent. A series of papers from Johns Hopkins University shows that a definite change has taken place over the last 30 years in the patients with postmenopausal bleeding seen at this hospital. In 1930, TeLinde[3] reported malignant lesions in 53.1 per cent of patients admitted with the complaint of postmenopausal bleeding. By 1952, Woodruff and Prystowsky[4] found malignant lesions in only 16.3 per cent of such patients.

Since many more instances of bleeding are not explained even after laboratory studies, examination under anesthesia, and curettage, the assumption that some of the lowered percentage of malignant disease is due to a much higher index of suspicion on the part of both patient and physician.

A recent study[5] of postmenopausal bleeding in patients more than 60 years of age who underwent vaginal hysterectomy shows that such bleeding is not rare. In a series of 324 patients, 79 gave histories of spotting or bleeding. When only occasional spotting occurred, as it did in 56 patients, the incidence of malignant lesions was rare, only two patients being found to have carcinoma. In a group of 23 patients in whom bleeding was protracted and lasted more than a week, there were seven carcinomas of the fundus and one of the ovary.

The patient's first visit should include not only the history, but as mentioned previously, examination with a strong light which is particularly important if the patient says she is bleeding at the time of the visit. Never lose the opportunity to pin down the source of the blood. Examination at the time of bleeding often rules out extragenital sources and may reveal a likely source as in the case of marked senile vaginitis and cervicitis. If the postmenopausal vagina and cervix show many petechial regions that bleed when wiped with an applicator, even though the bleeding is minimal, this is its most likely source. The use of hormonal suppositories usually gives good results.

The diagnosis of malignant uterine lesions which cause continuous or daily bleeding and have an associated malodorous discharge is self-evident and treatment may be purely palliative since these are often the symptoms of advanced malignant disease. The time to diagnose endometrial carcinoma is when the lesion is small and limited to the uterine cavity. This means establishing the diagnosis on the earliest hint of bleeding or change in vaginal discharge. Under these terms, even though pelvic examinations have not revealed a satisfactory etiologic source and the cervix is clean, dilatation and curettage are occasionally indicated, especially if the patient insists that the bleeding which occurred came from the vagina. Other times we are led directly to the cervix and uterus by a streak of blood or brownish discharge in the cervical os. Probing in the os with a small applicator may reveal some bright blood and thereby lead to the possible discovery of an endocervical lesion.

When the diagnosis of endometrial or endocervical lesion has been established, abdominal hysterectomy is the preferred treatment, though occasionally, in a poor-risk patient with severe prolapse, vaginal hysterectomy is better.

Cervical stenosis can be the cause of spotting or, more commonly, it may be the reason for a dark-red or brownish discharge. Stenosis may follow cauterization, surgical intervention, or inflammatory changes. Subsequently, a little discharge in the uterine fundus may build up enough pressure to open a slowly bleeding tract through the cervix. If infection occurs and pyometria results, the discharge will be more profuse, odorous and more suggestive of malignant disease.

ESTROGEN-PRODUCING NEOPLASMS.—Finally, one of the most interesting groups of malignant lesions is to be found in postmenopausal patients. This group includes the functioning estrogen-producing neoplasms of the ovaries, the granulosa cell and the theca-cell tumors. Although not common, they are not rare, and through their hormonal stimulation they cause the lining of the uterus to thicken and bleed irregularly. Most of these tumors, as to be expected from a mature hormone-producing tumor, are of low-grade malignancy, but others are high-grade, rapidly growing and metastasizing lesions. If the tumor is low grade and nonadherent, the diagnosis for cure is excellent. If it has become adherent, even though it is slow growing, it may recur. These tumors may cause irregular bleeding which may simulate the discharge of a menstrual period and may occur irregularly for years. If curettage in a patient well past the menopause reveals a thick hyperplastic endometrium, a hormone-producing tumor should be suspected and exploration should be carried out. Malignant lesions of the endometrium are associated with these ovarian tumors in about 25 per cent of the patients if they are postmenopausal[6].

In conclusion, I wish to re-emphasize that bimanual and visual examinations while the patient is bleeding are of utmost importance in determining the source of bleeding in menopausal and postmenopausal patients. If the patient is postmenopausal, the possibility is high that the bleeding is due to a malignant tumor.

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What is the average life span of Mississippi dentists?

That query has been directed to the State Board of Health which keeps all state records of vital statistics.

The average age of death of dentists in Mississippi in 1958 was 65.5 years.

"Only 8 deaths occurred in the dental profession last year," said Dr. A. L. Gray," and unfortunately three of these were due to accidents that might have been prevented."

Barring accidents, the life expectancy of dentists is high, according to 1958 statistics, the health officer stated.

The Present Status of the Antiatherogenic Agents*

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The confirmed nihilists in the field of atherotherapy would dispose of the subject assigned to me in one sentence: no proven antiatherogenic agents exist, ergo, present status: nil . . .

I dare say, and somewhat angrily, that in no other field of biology there exists so much unwarranted confusion, contradiction, repetition of old slogans (some of which are not worth the repetition). Those of the sincere investigators who do not limit themselves to timid probing of causation of atheroma alone, but venture also into the field of prevention of extention or hopefully presumed therapy, become automatically objects of comments (using the word comment in lieu of a more descriptive term). The mildest of those comments accuses the investigator of lack of scientific sophistication; the more outspoken comments better be not repeated here.

Most of us here are confronted with patients, victims of coronary disease every day: let's then get one thing straight; the coronary patient, like other ill people, does not give a fillip about collateral circulation, beta lipoproteins, fat metabolism and intima permeability: he wants relief of pain if he has coronary insufficiency, he wants maximum degree of protection from myocardial infarction, he wants to feel reasonably well, he wants to live as long as possible. To deny individually or collectively such a patient even a remote chance of life prolongation is not only unethical and professionally unwise, it is also bad business.

This does not imply indiscriminate prescribing of everything and anything recommended by detail men, *Reader's Digest* and *Good Housekeeping* magazines: It does imply preservation of open mind, critical appraisal of pseudo-sophisticated exponents of therapeutic nihilism within and outside ivory towers of academic milieu. A good example of scientific fairness is the very active group—both in animal and human experimentation—of Michael Reese Cardiovascular Section: For many years Doctor Louis Katz, an uncompromising gentleman with whom one can disagree, but whom one must just as strongly respect, had been bombasting the role certain amino acids, phospholipids and other so-called lipotropic agents were alleged to play in lipoprotein metabolism.

That attitude coincided with lack of any human or animal experimentation designed to study the effect, or lack of it, of these substances at Michael Reese Laboratories. Then fairly recently, on the basis of investigations conducted by him and his associates, they concluded that the relative or absolute deficiency of at least methionine is conducive to atheroma formation. Those of us who attended the Cardiovascular Seminar here a few weeks ago may remember Doctor Katz emphasizing this point. This attitude marks a radical change from previous condemnation and some may well learn from it a lesson on scientific objectivity.

Ideally, prevention and control of atherosclerosis should be aimed at the basic etiology of the disease process. In an entity which is caused or influenced by a number of factors a single control measure, medicament, or dietary régime can never, I repeat, can never be expected to be a truly universal antiatherogenic factor. Similarly no single diagnostic test, be it serum cholesterol, fasting chylomicron level or the exotic "atherogenic index" arrived at with extraordinary steps of mathematical calculations on the West Coast can be expected *ever* to diagnose the susceptibility to or even the presence of the disease in a given individual. How can we ante-mortem gauge the anatomy of coronary tree, the degree of masculinity, or the productive impact of feminity, the dietary habits and abuses over a period of several decades, the tissue deficiency of certain amino acids, the frequency and the quantity of outpouring into the system of pressor amines, the role of which only now most recently some of us begin to implicate and study?

In this maze of interwoven factors and in the light of conflicting views, contradicting reports, personality clashes, hasty reports from pleasure cruisers to South Africa, Europe and Alaska from where hundreds of vials of serum are sent with a note requesting cholesterol determination instead of "wish you were here," is it any wonder that a practitioner of medicine is bewildered and that he is reluctant at the end to accept any and all reports, dietary régimes, wonder cures?

I am not going to mention the anticoagulant therapies since Doctor Nichols, the true pioneer of this form of preventive régime, is going to discuss it. We all realize that anticoagulation and dicumarolization are aimed to prevent the most common complication of atherosclerosis. Are there then any agents with proven, or at least strongly suggestive antiatherogenic action? There is none. I repeat, there is not a single, solitary substance which merits the term of an antiatherogenic drug. There are substances, however, which unequivocally influence one or more of the contributing factors.

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Cholesterol, if you will pardon the word, total serum cholesterol, can be lowered. Thyroxin will do it consistently and to a significant degree. There is no good evidence that (1) thyroid harmones prevent human atherosclerosis,. (2) that lowering normal or even moderately elevated cholesterol levels is conducive to prevention, retardation or modification of human, I repeat, human disease. Nicotinic acid in unphysiological doses of several grams a day lowers cholesterol. Mr. Chairman, no doubt, well remembers the case of a girl with very high serum cholesterol in whom nicotinic acid reduced cholesterol dramatically and, also, induced pain of coronary insufficiency. Drastically reduced total fat intake will lower cholesterol—the patient will lose weight and most of his friends, as Irvin Page says. The role of estrogenic hormones in human arterial disease is less unequivocal. It is a fact, nevertheless, that a group of victims of prostatic carcinoma come to autopsy table with impressibly less coronary and aortic atheromatous plaques. If you have an *undesirable* coronary patient you may try estrogens: The patient will lose libido, potency and, perhaps, even his wife—and you lose the patient.

S Sitosterol, the plant analogue of animal cholesterol, has been reported to lower serum cholesterol. There is no evidence that it affects the serum lipid lipoprotein make-up or lessens or prevents atheroma formation. To study serum cholesterol as an index of atherogenesity is reminiscent of the inebriated gentleman looking for a lost nickel under a lamp post, not because he lost it there but because it was more expedient from the illumination standpoint. I shall not go into it now as most objective review articles cover the subject adequately.

The term lipotropic agent until recently had a rather unsavory connotation: to study, prescribe or comment in tone other than strongest condemnation smacked of quackery. It was—and still is at least partly—a paradox that the most outspoken critics never studied, prescribed or objectively reviewed the literature. Thus unemotional, unbiased discussion was impossible. Even the manufacturers switched to tranquilizers where prestige prevails, controlled studies are published and the margin of profit is much greater. At a recent two-day symposium on lipotropic agents organized by the University of Pittsburgh Graduate School of Medicine, I was surprised that what some of us suspected, and then found and timidly published on the basis of human experimentation was an old shoe to the Ph.D. and M. D. working with animals. Their contribution was not whether these agents influence fat metabolism—which they do—but rather what is the mode of action. Our observation on the ability of these agents to cause better dispersion of large lipid macromolecules (which was subsequently confirmed by Rawls and his group in New York) should be viewed in light of Morrison's controlled study reported several years ago on lesser mortality and morbidity in a group of over 100 patients as compared with a placebo group. The data available by now were sufficient to sway men like Louis Katz and unequivocal—at least in animal experimentation—to list the deficiency of at least methionine as an atherogenic factor.

Then the unsaturated fatty acids arrived. Mazola oil disappeared from the grocery shelves, consumed in fantastic amounts by the readers of *McCall* magazine. Foul smelling mixtures of vegetable fats were detailed as cholesterol entidotum. Every time fat was to be eaten, presto, in goes Arcofac or similar suspension. It was not enough to expose the coronary intima to animal fat, the vegetables had to get into the act. Try to down 100 ml. of corn oil and check the coagulation time—it is shortened just as readily as by the animal fat. Nevertheless, there is something good in it: Even moderate amounts of highly unsaturated fatty acids apparently decrease beta lipoprotein levels, which — still speaking of group correlation — is higher in clinically demonstrable atherosclerosis. Those relatively small doses of the so-called essential fatty acids do not lower cholesterol as reported first by Ahrens who used much higher doses, indeed replacing considerable amount of animal fat daily intake, but then not all of us look for a nickel under a lamp post . . .

The closest we have come so far to an antiatherogenic substance is heparin. It is unique since it combines the effect of stimulation of the clearing factor—an enzymatic component of serum—with an anticoagulant action. It is expensive, it can only be given parenterally, it is painful unless given intravenously, it acts for a short period of time only, it is a mess. Several months ago we reported a surprising finding that individuals differ in their response of clearing factor production: Those with bad family history from vascular standpoint, particularly males, have a much shorter period of clearing factor production. Young and middle age females with good history on both sides keep on producing clearing factor even after 7 to 8 hours, as compared with others who quit after 4 hours or less. I notice from German literature that someone else noted it too. This is how Nobel prizes have to be divided . . . Engelberg and others have impressive, controlled evidence that intermittent heparin administration lessens markedly morbidity and mortality as far as myocardial infarction is concerned. Fat induced angina can be prevented by heparin, but it cannot be prevented by placebo, no matter what the bedside manner is. Our current study of diabetics and their response to heparin on various levels of control is stimulating, at least to me.

The long term management of a coronary patient, aside from the problem to be discussed by Doctor Nichols, can be summarized as follows: It is hazardous and unwise to tamper with endocrine factors, unless proven hypofunction of thyroid exists. It is heroic—but not in a complimentary sense—to tamper with the sex hormones. I consider it unwise to administer large doses of fats, be they saturated or unsaturated. Moderate medicinal concentrates combined with lipotropic substances *can* and *do* influence lipoprotein metabolism, only one of many factors responsible for atherosclerosis. A cooperative, financially and otherwise, patient may profit by three 100 units of heparin injections given every week just under the skin. There is some evidence that diet drastically low in fat may be more injurious than our allegedly unhealthy fat rich diet. Common sense and moderation cannot be put in pills, but they can be stimulated, like the clearing factor.

MAGNOLIA SPEECH SCHOOL

Magnolia Speech School, in Jackson, Mississippi, is a charitable, non-profit institution established to teach speech and language to deaf and aphasic children.

It is a day school, and its term coincides with the Jackson Public Schools.

Children who are deaf or hard of hearing—ages 3 to 8—are admitted for beginning work. This year children who have completed 3 years of pre-school training will begin first grade work. More teachers are to be added as this class advances into grade school work.

The young aphasic child is also taught speech and language. An aphasic child is one whose brain center controlling communication is damaged, not fully developed or does not function properly. An aphasic child may have perfect hearing and average or above I.Q., yet it may be found in schools for the deaf, having been written off as deaf or mentally dull.

Older deaf and hard of hearing children are accepted for private lessons in speech and lip reading, auditory training and language from the public schools.

The deaf and hard of hearing are taught lip reading, speech, auditory training and language; the aphasic is also taught speech and language and is taught to respond to the spoken word.

The phonetic method is used in teaching speech. The child learns how to place his tongue, shape and feel for vibrations on the teacher's face. After he learns the sounds of the English language, he learns how to put them together into syllables, then into words, phrases and sentences.

Of course the handicap of deafness imposes limitations on a child, but there is absolutely no need for him to be cut off from communication with his hearing brother. Here the child actually learns to communicate by speech and reading lips. One of the main endeavors is to develop the child socially. Numerous visitors who come to observe the children leave with comments, "They act so normal."

The most desirable age to begin oral training for a child is at 3 or 4 years of age, because at this age it is possible to attain a better voice quality. The aim of the school is to carry the child through 3 years of pre-school work and from 8 to 10 years of grade school work, after which he is able to enter public schools for hearing children if he is of normal intelligence and has had the help of his family with him at home in setting language principles. Regardless of age, a child must have 3 years of pre-school training before he can "take" such matters taught in the grades.

Magnolia Speech School is governed by a board of directors composed of 18 members, comprising parents, professional people, and other interested and civic minded Jacksonians. It is supported by clubs, private donations, small tuition fees, and in the future it is hoped that this income will be supplemented by endowments.

The above résumé of the purpose and activities of this school is published in the *Mississippi Doctor* so as to bring to the attention of the medical profession in the state of Mississippi the existence of this facility. Any doctor having patients or knowing of cases needing such training and attention is invited to contact Mrs. C. D. Matthews, director, Magnolia Speech School, 2969 Angela Circle, Jackson, Mississippi.

The Phenomena of Aging*

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It should be rather obvious at the outset that the title of my paper is something of a misnomer, in that the phenomena of aging are so many and so varied that to cover them with any degree of completeness would require, perhaps, thirty days instead of the thirty minutes I have available here. As a matter of fact, during this past summer I participated in a conference which devoted almost thirty days to the coverage of just this topic. It might be useful for us to consider for a moment why a conference of such scope was considered necessary on this particular topic at this particular time.

I am sure you are all aware that in recent years there has been increasing concern about the problems of the aged in our society. Within the medical profession there has been a significant increase in the number of research and clinical reports dealing with the specialty of geriatrics, and there have been increasing numbers of drugs and medicines specifically designed for use by the aged. Even outside of the medical profession the careful observer would have noted the amount of television time being used to advertise a formerly somewhat obscure product called Geritol. We can be sure that the manufacturers are convinced that the number of potential customers is large enough to justify the costs involved. (I must confess, however, that so far I have failed to comprehend the social significance of a product labeled Geritol, Jr.) We might ask, why this suddenly increased interest in the aged? Haven't the aged always been with us? Haven't they always constituted a problem of some sort or another? Is this sudden interest a fad, or is it significant of some real change in the relations among the various segments of our society? To find the answers to these questions we need to consider the way in which our society is organized, and to look at some of the changes that have occurred in its structure in the recent past.

The particular way of life that we call Western Culture has changed more in the last two hundred years than it changed in the previous two thousand; and, what is more, the rate of this change is constantly accelerating. At one time it was possible for a man to learn a trade and be secure in the knowledge that there would be a continuing demand for his skills. Changes did occur, of course, but it took several generations for their impact to be fully appreciated. Now a man is fortunate indeed if he can get through his own lifetime without being the victim of some sort of technological unemployment. I am sure that in your own profession you are only too aware of the necessity for constant study and constant learning to keep up with the rapidly changing tools and techniques in the healing arts. I once heard a prominent chemist say that, if the leading chemist of 1938 had, like Rip van Winkle, fallen asleep and not awakened until this year, he would not now be qualified for a job as a laboratory assistant. This sort of problem has always affected the professional individual to some extent, but in our present-day society can be seen at all skill levels. Change is the order of the day, and the individual who cannot learn to change with the changing technology very soon finds himself with nothing to contribute and no buyer for his services.

When we look specifically at the role played by the elderly members of society, the present situation contrasts strongly with the situation which exists in most primitive societies, and which existed in our society as recently as one hundred years ago. In primitive societies the older members are usually regarded very highly, since they are the repositories of the accumulated wisdom and skills of the group. They are needed to impart their skills to the younger members and to lend the benefit of their experience in resolving the political and social problems facing the group. In our modern society, on the other hand, the emphasis is on change, on finding new solutions, and consequently, on youth. More often than not the patriarch is regarded, not as a repository of wisdom, but as an "old fogey." The sociologist, Burgess, has said that in large measure the aged individual in our society plays a role-less role; that is, there is nothing for him to contribute and nothing for him to do.

We are now in the position of reaping the rewards of the industrial, social, and scientific revolutions of the last hundred years. We are rapidly achieving the goals of health, prosperity, and education that we conceive to be the birthright of every American. Dangerous and degrading jobs are rapidly disappearing from the economy, to be replaced either by newer techniques or by machines. The work week has been cut almost in half and is due for even greater reduction; and everyone is looking forward to a state which was almost unheard-of in the last century—retirement. It is considered proper that a person who has spent 35 or 40 years contributing to the economy of the society should have the right to spend his declining years enjoying some of the fruits of his labor. Pension systems, both public and private, are the order of the day, and there are no signs that the trend is changing. But retirement is turning out to be something less than a complete blessing. After years of productive effort, a man finds that it is not so easy to adjust to idleness; furthermore, most people who retire on fixed incomes are finding themselves under considerable economic pressure. To some extent the problems of the retired can be traced to our ethical heritage from the Puritans: in the Protestant Ethic idleness is equated with sin, and the idle man is nagged by vague feelings of guilt. Other problems of the aged are more concrete, in that few are so economically situated that they can cope financially with increasing inflation or catastrophic illness. At the same time, society denies them the right to work on the grounds that they are now supposed to be enjoying the "golden years." For many of our retired workers, the gold has turned out to be a quite thin coating which rubs off under the slightest pressure.

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*Read before the 70th semi-annual meeting of the Delta Medical Society, October 8, 1958, Greenwood, Miss.

Another reason for the recent increase in interest in the aged members of our population is simply that there are now a great many more of them than formerly. In 1900 persons 65 years of age and over constituted only 4 percent of the population. By 1950 their absolute number had grown from about three million persons to well over 12 million, and they then represented eight percent of the total population. At present we have more than 16 million citizens aged 65 or more, or almost 10 percent of the total population. What is more, there is no reversal of this trend in sight. The estimated figures for 1970 call for an aged population of 21 million; and by the year 2000 the figure may rise as high as 35 million, or 13 percent of the total population expected at that time.

An interesting sidelight to the above figures has to do with differences in survival rate between the sexes. In 1900, in the age group 65 and over, there was a slight excess of men over women. By 1950 this situation had altered to the extent that the excess of women over men in that age group amounted to 650,000 persons. In the predictions for the year 2000, it is estimated that the excess of women over men in that age group will amount to 4.5 million. Predictions are always risky, of course, but our best guess appears to be that the world of the future will not only be less youthful, but it will be very much a women's world as well. Anyone who cares to comment upon the ultimate social consequences of this trend is much braver than I.

To what can this dramatic change in the age-profile of our population be attributed? The reason most commonly given is the increase in individual life expectancy, but this answer, by itself, represents a considerable oversimplification of the problem. Futhermore, it ignores a number of other factors which have been equally important. For example, about 20 percent of the increase in the number of persons over the age of 60 can be attributed to the change in our immigration policy since 1900. The large-scale immigration in that earlier period was composed mostly of younger persons, and they served to inflate the proportional representation of those age groups in the population. For example, in 1900 only 15 percent of our foreign-born population was over 60 years of age. By 1950 that figure had risen to 39 percent.

Getting back to the matter of the increased life expectancy, we have to consider the increase in life expectancy in connection with the age group we are interested in. A man who was 70 years old in 1950 could expect to live an additional 7.8 years; a man 70 years old in 1900 could have expected to live an additional 6.8 years. So, for that age group, the increase in life expectancy amounted to only one year. But the effects of increased life expectancy are cumulative. A child born in 1950 could expect to live 68 years, whereas a child born in 1900 could expect to live only 49 years—a difference of 19 years. This factor of improved survival during the early years of life—a phenomenon for which we must be grateful mostly to the medical profession—has brought about what is probably the most important factor in our age-profile: the decrease in fertility. It may seem strange to talk about a decrease in fertility in the face of the "baby boom" of the last 15 years, but it is still true that for many years the birth rate has shown a steady decline. Since so many more children survive to adulthood, it is necessary to have fewer children to begin with; consequently, there has been a relative decline in the number of young people. In fact, all age groups below the age of 30 have a smaller proportional representation in our population than they had at the turn of the century. For example, in 1900 we had 17 million children between the ages of five and 15. By 1950 this number had risen to 24 million. In absolute numbers this is an increase, to be sure, but let us compare that increase with the 35 to 45 year-old group. In 1900 there were about nine million people in that age group, and by 1950 that figure had risen to more than 21 million. Proportionately, the younger group showed a decline of more than 25 percent, while the older group was showing an increase in representation of more than 15 percent.

I don't want to overwhelm you with figures, but I do hope I have managed to indicate to you what the present situation is with regard to the number of aged in our population, what are the factors responsible for the changing age-profile, and what the probable pattern is for the future. It would be interesting to spend some time speculating upon what all these elderly people are going to be doing with their time, and how our society is going to change in order to incorporate this growing group which now has so little function, but I would rather instead spend some time discussing with you three specific problems having to do with the aged and their relation to the field of medicine. Two of these problems relate to personality characteristics of the aged and the consequences of these for medical treatment, and the third has to do with a research project in which I would like to interest you.

I am sure that all of you, particularly those who do charity work in a clinic situation, have had to contend with the problem of the elderly hypocondriac. These chronic complainers have no discernible organic defect, yet they use up a great deal of valuable time which could more profitably be spent on patients in urgent need of treatment. Hypochondriacs appear, of course, in all age groups, but there is a definite increase in their numbers in the older age groups. They are a burden to their families, to the medical profession, and to society in general. They, too, are unhappy in that they receive very little sympathy despite their sick condition. Physicians are as human as anyone else, and I am sure there have been numerous occasions on which you have wished that you could use the excuse of illness to avoid some unpleasant responsibility or as a basis for getting a little rest. By and large, however, this particular solution to unpleasantness is denied to you, and you resent, consciously or unconsicously, its use by others. It might help somewhat to consider some of the factors involved in development of hypochondriasis in the elderly and some of the things that might help to alleviate the situation.

Personality theorists have suggested that physical symptoms of illness serve the role of punishment for past transgressions in the individual and as evidence that no further punishment is necessary. In other words, that it is a method of reducing feelings of guilt and anxiety. In the case of the elderly person we can probably avoid entanglement in the complexities of Freudian psychodynamics by looking for causes that are simpler and more obvious. In the first place, we should recognize that in our society we are given life-long training in the principle that illness is an acceptable excuse for inadequacy; in fact, it may be the only really acceptable excuse. Many parents, for example, send their children to school with a note pleading illness when the real reason for the absence was a visit from Aunt Minnie or a shopping trip. Whenever our children consistently fail to live up to what we expect of them, we always ask them if they are feeling well. And the children learn; very soon they become alert to the fact otherwise punishable behavior will be forgiven if it is a product of illness. The elderly person, likewise, is inadequate in many respects, or society puts him in a position where he can no longer perform in a way that he feels is adequate, and it is no surprise that he draws upon his lifelong experience in seeking a reason for his inability to continue making his contribution to society or to live up to the expectations of others. Many of you, I am sure, have had patients who, upon being passed over for advancement in their jobs, have developed a chronic psychosomatic complaint which allows them to say, 'I could have reached the top if I hadn't gotten this bad heart which requires me to take it easy". It is not surprising that the person of advancing age also follows this easy route to self justification.

A second factor involved in the development of hypochondriasis is the increasing concentration of attention of the aging person upon his bodily processes. Partly this is due to the fact that he has nothing else to do. With few other activities to occupy his time, the routine events of eating, sleeping, digestion, and eliminating become the significant events of life and consequently are attended to more closely by the idle person than they would be by an active one. The many ordinary variations in the timing and efficiency of these processes become events for discussion and speculation, and the conversation of older persons among themselves is largely devoted to the exchange of confidences about physiological processes.

Thirdly, we have to consider the fact that there *are* more illnesses and breakdowns among the elderly than among the young. The aged person has good reason for suspecting that he may be in need of medical attention. He does have constipation; he does have an occasional bloody stool, perhaps; he does find his heart beating rapidly after mild exercise; and he does have occasional insomnia. His natural concern over these evidences of deterioration, plus his awareness of the number of deaths in his age group from heart disease or cancer, lead him to exaggerate the importance of these phenomena which he had never observed in himself before. And finally, of course, though it is rarely verbalized, there is a fear of impending death. It does not take a knowledge of the probability theory to recognize that the older you get the more likely it is that you will die in the immediately foreseeable future.

In any case, the factors we have discussed lead, I think, to a better understanding of why hypochondriasis is so frequently associated with advanced age. Indeed, we may wonder why it isn't more common than it is. Understanding the factors leading to the development of a certain kind of behavior, however, does not help always with the problem of what to do about it; and while it may be very well for me to urge you to treat your elderly hypochondriacs with greater sympathy, it nevertheless is still true that they are an annoyance and a deterrent to better medical service for those who have greater need.

What usually happens, of course, is that the patient is told bluntly that there is nothing wrong with him and that he should go home and forget about it, but I doubt that many hypochondriacs have ever been cured that way. The forces in the patient that make these symptoms necessary for the maintenance of personality organization are usually stronger than the authority a physician can muster in attempting to dispose of them. It is more likely that the symptoms will be retained and the physician will be rejected. An alternative procedure is to place the person on medication that amounts essentially to a placebo; this usually produces only temporary disappearance of the symptoms. The result is the common picture of the hypochondriac who goes from physician to physician, from medication to medication, and, frequently, from symptom to symptom.

On the other hand, a few physicians have the skills and the inclination for (and few patients can afford) the sort of extensive psychotherapy that is required for the patient to come to recognize, on his own, the psychogenic factors underlying his symptomatology and to work through to a better sort of personality. Furthermore, even where attempts have been made to use psychotherapy in a free clinic situation, the process is frequently complicated by the fact that the patient was originally referred by a welfare agency which is anxious to know whether or not the patient is really disabled. What is the responsibility of the physician in a case of this sort? Should the patient be allowed to continue being supported by society while undergoing psychotherapy? How can you ethically avoid giving an honest answer to the agency, even though you know that the result will simply be that the patient will take his symptoms elsewhere? I do not claim to have answers to these questions; I have cited them merely as examples of the kind of dilemmas faced by a physician in dealing with hypochondriacs. They apply to all age groups, of course, but particularly to the elderly, since both hypochondriasis and dependence upon social welfare are maximal in that age group.

The best answer to the problem of hypochondriasis in the aged seems to lie in a program of community organization to help the aged find a meaningful role to play in society. It has been found in many communities that, when the aged have something to do, when their interests are turned outside of themselves, when they feel that they are once more contributing something of value to the community, then attendance at the local clinic begins to drop sharply. As a sort of sidelight on this phenomenon, I might mention that many clinics devoted mainly to geriatrics have found that their waiting rooms were crowded to an extent unjustified by the patient load. They discovered that patients were arriving at eight o'clock in the morning, even though their appointments were not until eleven or so. The clinic waiting room had become a social center, and the visit to the clinic was the social highlight of the patient's week. Needless to say, this situation complicated still further the problem of getting rid of the patients once their physical symptoms had been adequately cared for.

I do not have time here to survey the excellent work that is being done by community organizations all over the country in providing programs for the aged, or to discuss the novel solutions to this problem that have been developed by community leaders with imagination and energy. I would like only to emphasize that programs of recreation are not, by themselves, sufficient. Golden Age clubs and similar organizations play a useful role in providing centers where the aged can meet and enjoy the company of others with common interests, but the senior citizen wants also to continue being a citizen. He does not want to be relegated completely to an old folks' nursery school, so to speak. He wants to feel needed by the community and to feel that he still has something of value to contribute to society. The most successful programs have been the ones which have looked for ways to provide this priceless ingredient of self respect.

The second problem associated with medical problems of the aged has to do with the psychological effects of isolation. Many of you no doubt are familiar with the excellent research studies recently conducted at McGill University, at the National Institutes of Health and elsewhere on the effects of removing normal individuals as completely as possible from incoming sensory stimulation. Subjects have been placed for fairly long periods in dark, soundproofed rooms and required to wear cuffs that prevented them from using their hands. In general, the objective has been either to remove stimulation entirely or to make it as uniform as possible. In one study, by Lilly, subjects were even placed completely underwater so as to reduce as far as possible the differential stimulation of skin surfaces. The outstanding result of all these studies has been that this type of isolation is extremely unpleasant for the subject, that he quickly becomes disoriented and anxious, and that after prolonged periods, or with extreme sensory deprivation, hallucinations appear along with other psychotic symptoms. Lilly found, for example, that the maximum time he could spend in the underwater situation was four hours, after which hallucinations and fantasies became so intense as to be frightening.

We should recognize that these same conditions apply, to a lesser degree, to many elderly people. The isolation occurs in two forms: first, a loss of sensory efficiency, particularly in vision and audition leads the elderly person to feel cut-off to some extent from the rest of the world. Any of you who has experienced a temporary loss of vision or hearing knows at first hand how disturbing this lack of contact with the surrounding world can be. The crucial point in connection with the aged, however, is that we couple this loss of sensory contact with the loss of much of the person's usual social contacts. We isolate the aged member of the family in an upstairs room, or in a hospital, or in a home for the aged. Even those who are not ill are no longer able to get around to visit their friends as much as they used to, and the younger members of the family have no time to spend with them. In a very real sense they are cut off from the world, and it is not surprising that many of them behave in ways similar to the subjects in the isolation experiments. I do not think it would be rash to predict that, in many aged individuals, the symptoms of senility stem more from the factor of isolation than from any pathological process in the central nervous system. If this is true, it has a number of practical consequences. Since more and more of our mental hospital beds are being occupied by elderly patients, it is important to know whether a significant proportion of these could be discharged or cared for in nursing homes as the result of a program designed simply to bring them back into contact with the world about them. In hospitals such as those of New York State, where the concept of continued activity for every patient has been applied (the so-called "total push" concept of therapy), it has been found that the discharge rate can sometimes be raised to ten times its former value. It is the medical profession which will have a great deal to do with determining whether we are to spend more money on buildings in which to house our increasing senile population, or whether the money might more properly be spent on programs designed to reduce the number of people needing to be housed. Therefore, additional research and experimentation in programs such as that being tried in New York should be a high priority item here in Mississippi.

Finally, I should like to propose a modest program of research which I would like to see carried out all over the country by groups of physicians such as are represented here. In the whole field of gerontology the greatest lack at the present time is information about the process of aging. We need more facts than we have about the social, psychological, and economic factors in aging, and particularly we need to know more about aging as a physiological process. We have almost no norms for physiological functioning at advanced ages, and the results of a physiological measure taken on a man of seventy cannot be appropriately evaluated against norms derived from young adults. Just as the pediatricians discovered that the child is not a small adult, so the geriatricians know that the aged person is not simply an adult forty years later; but we do not as yet have extensive studies of the aged of the kinds that have contributed so much to the understanding of the medical problems of children.

I am sure that each of you has, in your practice, a number of patients whose general health is good but whom you tend to see at fairly regular intervals. I would like to see your society inaugurate a program in which all members agreed to include some one specific physiological measure in all physical examinations. No one practitioner could hope to build up a significantly large number of cases, but all of you working together, and following the same patients from middle age through to old age, could gather information that would be of inestimable value to your own profession and to all the allied professions which are concerned with the aged. And, if other similar societies were to do the same with other physiological measures, or with the same measure applied to patients from other regions of the country, eventually the profession as a whole would have available the kind of data that are so sorely needed and which could otherwise be gathered only by a long and expensive research project undertaken, probably, under government auspices. I have heard, about third-hand, that the AMA and the National Hospital Association have endorsed the idea of such a nationwide project. I hope you will seriously consider investigating the possibility of participating. To do so would, I think, allow you to make an invaluable contribution to the solution of a problem which is already acute and which gives every sign of becoming more so.

In summary, I would like to emphasize that the growing problem of the aged in our society is one that will probably affect you more than any other professional group. Physicians are always leaders in their communities, sometimes whether they want to be or not, and on your shoulders will fall much of the responsibility for deciding what action the community is to take. If you recognize the problem now and urge your communities to take positive action it may be possible to avoid more serious problems in the future. The senior citizens have not yet fully recognized that they constitute a group having many common needs and desires, and that they share many grievances, both real and fancied, against society. Recognition of these facts is coming, however, and we can anticipate that a potentially very powerful political pressure group will develop. This group will try to get what it wants, and the most urgent needs for the aged are economic security and a guarantee of medical care. In many states it has already been discovered that this group, all of whom are voters, tend to compete for funds otherwise devoted to child care and education. At the national level they will be seeking extensive programs of economic and medical protection that can only be financed by additional taxation; and because of their economic situation, they will pay only a small part of the taxes. We must recognize that these individuals have legitimate needs and a right to expect more from society than they are now getting. Unless we get together and voluntarily so reorganize our society that their needs are more adequately met, we will find the initiative taken from our hands. On the other hand, if we do recognize the challenge of our aging society and rise to meet it, I have every confidence that we can build the kind of world in which each of us *can* look forward with confidence to a long and satisfying life.

More than 800,000 Americans have been cured of cancer and are still living, an officer of the American Cancer Society reports. Another 900,000 who have undergone treatment are in a five-year observation period at the end of which they will be judged as cured if their symptoms do not recur. Where the cure rate was one in 10 cancer cases in 1913, it is now one in three. Early diagnosis is vital.

In mid-February, the state of Michigan ran out of cash. A crisis was averted when Michigan industries paid some $35,000,000 in taxes months ahead of the due date.

The funeral oration for Dr. Carver of Tuskeegee, Alabama, began, "For God so loved the world that he gave peanuts and sweetpotatoes and Alabama clay and men of varied colors and dedication like George Washington Carver, once slave of men, but above all a slave of God. . . . "

Do doctors really die young?

The old saying to that effect is disproved by data just released by the State Board of Health.

"The average age of Mississippi physicians claimed by death in 1958 was 71.3 years, being the seventh consecutive year that the Biblical life span has been exceeded," said Dr. A. L. Gray, Executive Officer.

Of the 31 deaths recorded, over half were caused by heart disease. Cancer was the second leading cause of death with vascular lesions close behind.

Seven of the physicians were over 80 years of age and only two were under 50.

Pasteur was really the father of curative and preventive medicine. He had the master mind for research in different fields of science. The late Dr. W. A. Evans of Aberdeen worked with him in his laboratory in France. "Pasteur believed that science and religion walk hand in hand. He felt that faith in God is the supreme thing and that science is here to help that faith along."

Medical Center Miscellany

85 to Graduate

The University of Mississippi School of Medicine graduating class will this year share the commencement spotlight with degree candidates from two other schools.

Newly dubbed, Commencement Exercises of the University of Mississippi at the Medical Center, the Sunday, June 7, ceremony will include graduates from the School of Medicine, School of Nursing and Graduate School.

An anticipated 85 candidates will march in the processional which begins at 4:00 p.m. in the First Baptist Church. Seniors in the medical school number 63, the nursing school has 18 applicants for the B.S. in Nursing while three Master of Science and one Master of Surgery degrees are also to be awarded.

The Medical Center's historic first commencement just two years ago boasted an even 24 Doctors of Medicine and four Bachelors of Science in Nursing in what was then a nursing division within the medical school. By 1958, the graduating classes had grown to 44 M.D.s and 14 nurses.

The vastly expanded 1959 commencement is clear evidence of the less than four-year-old Medical Center's gratifying growth and progress, says Dr. D. K. Pankratz, dean of the medical school and director of the Center.

Dr. Stanhope Bayne-Jones, of Washington, D. C., is to deliver the commencement address. Chancellor J. D. Williams will confer degrees with the candidates to be presented by Dr. Pankratz, Miss Christine Oglevee, dean of the School of Nursing, and Dr. Charles Randall, chairman of the medical school graduate study committee, acting for the Graduate School.

The day-long activities will begin with an alumni breakfast in the Heidelberg Hotel Roof and continue with the baccalaureate sermon tentatively scheduled in the First Presbyterian Church. Graduates and their families will be guests at the Chancellor's reception during the early afternoon.

Medical Alumni Meeting

Ole Miss Medical Alumni are set to elect new officers at their annual dinner-meeting during the Mississippi State Medical Association conference on the Gulf Coast. The meeting will be held May 12 in the Buena Vista, according to Dr. James Grant Thompson of Jackson, outgoing president.

OB Nurse Program

The University Medical Center will present a conference on Methods of Helping Parents with Pregnancy, Childbirth and Breast Feeding on May 15.

Open to nurses, teachers of family life, health and physical education and others working in the field of psychosomatic aspects of normal childbirth, the one-day program has been planned by Dr. Niles Newton, assistant professor of psychiatry.

Physicians are invited to send their nurses to the conference which will include lectures by Dr. Michael Newton, professor of obstetrics-gynecology; Dr. Lois Mosey, instructor in ob-gyn; Mrs. Mabel Fitzhugh, research associate, and representatives of various hospitals, organizations and agencies which sponsor classes for pregnant women.

The Medical Schools absorb 30 per cent to 40 per cent of the university budget while graduating less than 10 per cent of its students.

The Medical Schools are in a serious financial situation—student tuition pays only 18½ per cent of total costs. Outside help is needed.

The Medical Schools are the basis of good medical care—they must be kept strong.

A.M.E.F. Funds are used to attract and retin competent instructors, by augmenting salaries.

A.M.E.F. funds are used to purchase needed equipment not available through annual budgets.

A.M.E.F. funds are used to provide the medical school dean with "emergency" funds, unrestricted in use.

A.M.E.F. was founded in 1951 through a grant from A.A.M. and is governed by 15 physicians including six presidents of A.M.A. and five medical school deans.

A.M.E.F., since 1951, has raised nearly $8,000,000 for medical education.

INTERPRETING MEDICAL LITERATURE

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CARDIOLOGY

A Study of Antibiotic Prophylaxis in Patients with Acute Heart Failure—*New England Journal of Medicine*, Vol. 260, No. 12, March 19, 1959, by Robert G. Petersdorf, M.D., and Richard K Merchant, M.D., New Haven, Connecticut.

The tendency for patients in congestive heart failure to contract pulmonary infection is well known and the reciprocal relationship of pulmonary infection precipitating bouts of cardiac decompensation in patients with heart disease is also an unfortunate truth. Because of the difficulty in differentiating pulmonary congestion from pulmonary infection by physical examination and x-ray, it has been suggested that antibiotics be administered routinely to all patients with acute episodes of decompensation, either to prevent the occurrence of pneumonia in a particularly susceptible subject or to treat an infection already present. This practice has never been subjected to critical analysis and the authors, in view of the risk of superinfection with resistant micro-organisms or the development of hypersensitivity to these agents, make an evaluation of the risk of such a procedure, trying to assess the gains of such a regimen. Their study was performed on a group of patients with acute heart failure given prophylactic chemotherapy and compared to a control group in which these drugs were withheld. Their conclusions were that patients protected by prophylaxis with antimicrobial agents as indicated in the group treated with antibiotics. There was a similar incidence of pneumonia, clinically and at autopsy, in the two groups.

Summary: Certainly no benefits seem to be achieved by the prophylactic use of chemotherapy agents in patients with congestive heart failure. The very real dangers of superinfection with resistance to micro-organisms seem to outweigh any potential benefit that these patients may derive from antibiotics and their use should be reserved for clinically or roentgenologically evident pulmonary infection.

PEDIATRICS

Acute Epiglottis in Childhood: A Serious Emergency, Readily Recognized at the Bedside. *New England Journal of Medicine,* Boston. W. Berenberg and S. Kevy. No. 18 (May 1) 1958.

Forty-two cases are reviewed from 1946 through 1954. Eleven were under 2 years of age, 15 were from 4 to 8, and one was 14 years old. Most of the cases occurred from November to May. Twenty-two children had been ill less than eight hours. Only 10 patients had been ill from 16 to 24 hours before admission. All had respiratory distress on admission. Throat pain and marked dysphagia with pooling of mucous and saliva were early symptoms soon followed by irritability, restlessness, and respiratory difficulty. Seven did not have fever on admission. In the rest, average temperature was 102.5°. Hoarseness was present in 12, stridor in 30, and a croupy crow in 15. Respiratory rate was not elevated more than one would expect with temperature. Dyspnea was striking, and 24 of the patients had diminished air exchange. Twelve presented a picture of shock with pallor, cyanosis, prostration, and changes in consciousness. This often appeared suddenly without warning. Pharyngitis was often present, but mild. Significant retraction of intercostal spaces and use of accessory muscles was present in 33 patients. Epiglottis was involved in all constantly showing edema and a fiery-red appearance. This was aptly described as a "cherry-red" epiglottis. Eleven of sixteen blood cultures grew out Hemophilus influenzae, Group B. Seventeen throat cultures were positive for H. influenzae, two for Staphylococcus pyogenes var. aures, one for pneumococcus, and one for B-hemolytic Streptococcus. WBC ranged from 6,300 to 36,400.

The most important parts of therapy were constant watching and a tracheostomy set by the bedside. Eighteen patients required tracheostomy: four on admission, four within one hour, and five from 1 to 3 hours after admission. Longest interval before tracheostomy was 19 hours. Appropriate supportive therapy and antibiotics were administered.

In discussing this entity the authors point out several very important facts. First, this disease is extremely serious and the patient must be where he can be closely watched and a tracheostomy can be done if necessary. Second, in examining the throat one should depress the back of the tongue so that one can get a look at the epiglottis; if this is done one will immediately know the diagnosis. In fact, with the clinical picture presented it should be absolutely "mandatory" to look at the epiglottis. Third, these children (and adults, too, with this disease) can progress from being not too sick to death in a matter of minutes. This does not imply that all cases should have a tracheostomy but that at the least sign of cyanosis or of real need for oxygen a tracheostomy should be performed. Although some of these cases may be due to a virus, yet they should be treated as if H. influenza was the etiologic agent.

MISSISSIPPI STATE MEDICAL ASSOCIATION
Scientific Program, 91st Annual Session,
Hotel Buena Vista, May 12-14

Section on Eye, Ear, Nose and Throat

Thursday, May 14, 1959
Hurricane Room 'D'
Lemann H. Bounds, Meridian, Chairman

Review of Some of the Recent Advances in Ear Surgery
Ralph Sneed, Jackson

Applied Anatomy for Ptosis Surgery
Frand Adair, St. Paul

Modern Treatment of Nasal Fractures
Jack R. Anderson, New Orleans

Facial Pain
Walter R. Neill, Jackson

Reconstruction of the Nasal Septum
Eugene Hesdorffer, Jackson

Section on Medicine

Tuesday, May 12, 1959
Hurricane Room 'D'
Fred E Tatum, Hattiesburg, Chairman

Iron Deficiency Anemia
B. R. Gendel, Atlanta

Chemical Tests and Clinical Acumen in the Differential Diagnosis of Jaundice
J. R. Snavely, Jackson

Controversial Clinical Issues in Coronary Disease
Alva Bowen Weir, Jr., Memphis

Hypothyroidism and Myxedema
L. T. Carl, Jackson

Paper Electrophoresis As An Aid in Clinical Diagnosis
T. F. Puckett, Hattiesburg

Section on Obstetrics and Gynecology

Wednesday, May 13, 1959
Hurricane Room 'D'
I. C. Knox, Jr., Vicksburg, Chairman

A Critical Review of Methods of Diagnosis and Treatment of Female Sterility
George J. Nassar, Greenwood

Uterine Anomaly With Case Report
Carl E. Lewis, Jackson

The Technique and Place of Cervical Cone Biopsy in Obstetrics and Gynecology
James Henry Ferguson, Miami

Report on Maternal Mortality in Mississippi in 1957
Michael Newton, Jackson

Conservative Management of Dermoid Cysts of the Ovary
Phil C. Schreier, Memphis

Section on Pediatrics

Wednesday, May 13, 1959
Lotus Room South
George W. Herring, Hattiesburg, Chairman

From the Mouth of Babes
Ralph V. Platou, New Orleans

Acute Otitis Media in Infants and Children
L. J. Rutledge, New Orleans

Current Status of Heart Surgery in Infants and Children
James D. Hardy, Jackson
Watts R. Webb, Jackson

Anesthesia in Children
Fred D. Hill, Hattiesburg

Section on Preventive Medicine

Thursday, May 14, 1959
Card Room
Durward L. Blakey, Jackson, Chairman

Epidemiologic Studies by County Health Departments
Ruth Hagstrom, Starkville

Histoplasmosis
Clyde Watkins, Sanatorium

Virus Infections and Human Disease, Past, Present and Future
John P. Fox, New Orleans

Evolving Patterns in Health Protection and Conservation
A. L. Gray, Jackson

Section on Surgery

Wednesday, May 13, 1959
Hurricane Room 'D'
William O Barnett, Jackson, Chairman

Tendon Injuries
Daniel C. Riordan, New Orleans

Practical Applications of Physiological Principles to Gastric Surgery
Edward R. Woodward, Gainesville

Thyroid Carcinoma: Diagnosis and Management
George H. Martin, Vicksburg

The Staphylococcus Problem: Guides to Hospital Control
Curtis P. Artz, Jackson

Panel: Technical Mishaps Occurring During Surgery: Recognition and Management
James D. Hardy, Jackson, Moderator
Leonard W. Fabian, Jackson
J. Harvey Johnston, Jackson
Edward R. Woodward, Gainesville
Willard H. Parsons, Vicksburg

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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SIMPSON-KEOGH: REMEDY FOR INEQUITY

Guest Editorial

For a quarter of a century, federal tax law has discriminated against the self-employed professional person with respect to setting aside money for retirement. During the mid-30's, provision was made for the corporate employee to enjoy such tax benefits. Under these plans, the corporation is permitted to set aside a stated amount on which no tax is paid. Whether the employee contributes or not, he is able, upon retirement, to receive periodic payments from this fund, paying at that time only the tax on amounts drawn. He, therefore, enjoys a tremendous tax savings.

On the other hand, a self-employed professional person must pay tax on monies set aside for retirement at the time of conservation. For all practical purpose, his savings are "last dollars earned" upon which are levied the highest income tax rate.

To correct this inequity, bipartisan legislation designed to permit self-employed persons to set aside portions of their income for retirement purposes with taxes deferred was introduced in the House of Representatives June 27, 1952. The proposals, H.R. 8390 and 8391, were sponsored by Congressman Eugene J. Keogh, a Democrat from Brooklyn, New York, and Congressman Daniel A. Reed, a Republican from Dunkirk, New York. The bills received support from nearly all major professional groups but no favorable consideration from Congress.

The legislation was reintroduced in succeeding sessions of Congress, usually with a different Republican sponsor. In 1958, during the Second Session of the 85th Congress, a version of this legislation known then as the Jenkins-Keogh bills, was passed by the House of Representatives but failed to receive consideration in the Senate.

The legislation was again introduced in the First Session of the 86th Congress last January as the Keogh-Simpson bills, H.R. 9 and 10. Called up under a suspension of House rules on March 16, the measure was overwhelmingly passed on voice vote and sent to the Senate.

The Keogh-Simpson bill is designed to encourage establishment of voluntary pension plans by self-employed individuals. It permits a deduction from adjusted gross income each year in an amount not to exceed 10 per cent of net earnings or $2,500, whichever is less. In no case may more than $50,000 be so deducted during the lifetime of a participant.

For individuals aged 50 or more on January 1, 1959, the annual limit would be increased by one-tenth for each full year in excess of 50. Thus, for a professional individual aged 60 on that date, the annual limit on his deduction would be 20 per cent of self-employment income up to a maximum of $5,000. For purposes of this legislation, a self-employed individual is defined as one who is subject to tax on self-employment income

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[*] By Rowland B. Kennedy, executive secretary of the Mississippi State Medical Association, Jackson, Mississippi.

under the Social Security Act *and* physicians and clergymen. The two latter categories of professional individuals are unique in their exclusion from compulsory participation under Social Security.

Benefit payments from a voluntary retirement plan after age 65 would be considered a portion of gross income and subject to such federal taxes as may be effective at the time of receipt. Funds conserved during an individual's productive lifetime would be maintained in an irrevocable escrow subject to a tax penalty of 110 per cent if withdrawn prior to retirement.

Mississippi's Congressmen and Senators have been on record for years as endorsing this legislation. On March 16, all Mississippi Congressmen were present in the House and actively supported the bill. It is expected that the proposal will encounter difficulty in the Senate because of administrative opposition based on a fear of tax revenue loss.

Over a year ago, the Canadian Parliament enacted similar legislation applying to all persons having earned income without respect to source. The measure passed over opposition by the government led by the Ministry of Finance. Experience with the program in Canada after one year has shown that a temporary revenue loss resulted but it amounted to only 18 per cent of estimates made by the Ministry of Finance. It is, therefore, reasonable and logical to believe that opposition by the Eisenhower administration is founded upon unnecessary fear. It is generally believed that the President will veto the measure if it is passed. The problem, then, becomes one of securing passage by a sufficient margin to discourage an administration veto or of having sufficient votes with which to override the veto.

Some administration leaders and northern liberal Senators have charged that the Simpson-Keogh bills are "class legislation." They contend that higher income groups would benefit in tax savings while the nation as a whole would sustain a loss of needed tax revenue. These arguments are false and misleading. The legislation effects only a partial correction of tax inequities upon the professional person. It is capable of producing self-provided retirement security without governmental assistance, greater capital investments which, in turn, would produce revenue, and a resulting greater financial stability because of these investments.

In Mississippi over 3,500 new patients are admitted to our mental hospitals each year.

TO A BUILDER IN SERVICE

Witnessing the dedication of the Felix J. Underwood Health Building at Jackson made many hearts beat with pride and appreciation. Dr. Gray presided with efficiency. Everything said was timely and to the point.

Governor Coleman made a most pertinent remark in the course of his speech when he said "you may travel across the land and up and down every street, and you will never find a monument to any person whose purpose was to tear down rather than to construct."

The Felix J. Underwood Health Building is a monument built on the rock of construction and service and it will stand to be admired for years to come.

PHYSICIAN OF THE YEAR

The doctors of the mid-South area appreciated the editorial comment below from the *Commercial Appeal* on the beloved Dr. Tom Mitchell. He could well be called the father of pediatrics in this section. Congratulations to Dr. Tom and to the Tennessee State Medical Association.

"Those best qualified to evaluate his professional attainments—the members of the Tennessee State Medical Association—have selected DR. FRANK THOMAS MITCHELL as Tennessee's outstanding physician of the year.

"It is an honor which 'Dr. Tom,' as he is affectionately known, will wear with the unostentation which is so marked in him the while, no doubt, asking himself, 'Why did they select me?"

"The legions of children to whom he ministered over the years could tell him why. The patients of Le Bonheur Children's Hospital could tell him why.

"The thousands of students who have benefited through his guidance and tutelage at the University of Tennessee's College of Medicine could tell him why. 'Dr. Tom' has been constantly associated with that college since 1917.

"The State Medical Association did tell him why. It was because of "his tremendous contribution to child health during the past 40 years and the fine influence he has exerted on literally thousands of students at the University of Tennessee."

Those few words are a wrapping for one man's tremendous achievement and for the respect and affection it has engendered him. While they are primarily intended to convey the regard his profession has for Doctor Mitchell, they are an accurate reflection of this community's opinion of a good and most useful citizen.

EDITORIAL

With this issue we complete the thirty-sixth volume of the *Mississippi Doctor*. This journal was established by Dr. V. B. Philpot at Houston, Mississippi, and a year later he transferred it to the Northeast Mississippi Medical Society. The society accepted it and offered the editorship to Dr. W. H. Anderson of Booneville, with the understanding that he would take it over and publish it without any cost to the society. Later the society's interest was purchased by Dr. Anderson.

The Journal in 1932 became the official organ of the Mid-South Postgraduate Medical Society, without any promise of financial aid, but with an occasional honorarium. In 1936 the *Mississippi Doctor* was adopted as the official organ of the Mississippi State Medical Association, which had utilized a section of the *New Orleans Medical and Surgical Journal* for several years. The agreement set a subscription price to members of the Mississippi State Medical Association of one dollar per year as its only financial obligation. The editor had the responsibility of financing the journal by personal solicitation of advertising. For a quarter of a century the papers of the Mid-South Postgraduate Medical Association, the Mississippi Medical Association, and many district society papers have been published. Also there have been papers from the best medical talent across the nation when they were timely and thought to be of service to our readers, especially by men bringing new ideas from research.

We are now printing about two thousand copies per issue, about half go to our state association and the rest to the Mid-South and across the nation, and to the leading medical libraries of the nation.

The *Mississippi Doctor* has always given of its space liberally in the interest of public health. Many, many years ago it began to call attention to the need of a central health building which last week became a reality when the Felix J. Underwood Building was dedicated.

The Journal has published many papers from general practitioners. It has generously published papers from doctors who were trying to secure membership in the American College of Surgeons and American College of Physicians.

The *Mississippi Doctor* was called "an excellent but little known medical journal" in an article in the *Reader's Digest* written soon after the advent of the sulfa drugs, by Dr. Paul de Kruif when Drs. Long and Dees first successfully used sulfanilamide in the abdomen in cases of ruptured appendix. The idea soon gained national attention. The treatment of facial fractures by wiring and fixation was largely a new idea brought to the journal's readers by Dr. Milton Adams of Memphis, Tennessee. This procedure proved to be such an excellent one that it was adopted by the teachers in medical schools. Several drugs have been reported first in this journal from trial series.

The *Mississippi Doctor* has been the champion of rural medicine, advocating the bringing of medicine to the people at a price which could be utilized. It has always advocated the development of the small hospital and helped wage a campaign for the per capita distribution of funds for the indigent sick; it crusaded for the establishment of a four-year medical school, heralded it as a reality, has proudly and loyally supported our growing University Medical Center. Its complete cooperation has been given to the Commission on Hospital Care in building more and better hospitals, while helping preserve the fine service of the private hospital.

The Fifty-Year Club from its conception has been a labor of love, publishing biographical data of our men who have practiced a half century.

Within the last few months the Journal has made a special effort to understand the workings of the State Medical Association, the hospitals of the state, the medical school and public health service, and augment the harmonious functioning of all. We believe that Mississippi is really keeping step with the march of medicine. It is keeping to the front on every line and the deepest desire we have for this Journal is that its contribution be worthy.

Eighty per cent of nurses are still trained in the private hospital. These hospitals have been and are still doing a good job, but we have a shortage of nurses. This Journal is trying to help solve this problem. We think that there is a great need for the three-year trained bedside nurse. This type of school is underway in an affiliation between the Northeast Mississippi Junior College and the Northeast Mississippi Hospital at Booneville. This more or less shifts the responsibility of the training of nurses from the hospital to the state. We think this plan deserves serious consideration from the medical societies and the hospitals as well. The nurse is the right arm of the medical profession and we trust she will continue to hold to the concept that she is a part of a great profession.

This Journal acknowledges gratefully the friendship and support in many ways of the majority of the doctors in the state. We have striven together, and achieved together for Mississippi medicine, and we cherish the privilege of having had a lasting part.

NEW HEALTH BUILDING DEDICATED

FELIX J. UNDERWOOD BUILDING IS OPENED

Mississippi's new quarters for its State Board of Health was dedicated April 17 in memory of a man credited with saving a thousand lives and bringing international recognition to his state.

Ribbon-cutting ceremonies for the Felix J. Underwood Building on North State Street were marked by speeches by Gov. J. P. Coleman, leading business men, the medical profession, and the assistant surgeon general of Washington.

Dr. David Price of the United States Public Health Service, reminded that Dr. Underwood's influence had international impact. The late Dr. Underwood was the only physician in the entire United States to receive the U. S. Public Health's Lasker Award on two occasions.

Gov. Coleman referred to the new quarters as a "monument to those who do things and get things done," and as "truly a monument to one man who lived for the betterment of human beings in Mississippi."

Citing work yet to be done, Gov. Coleman left as a future challenge for emphasis on "faith in our abilities to get things done plus an ability to work together."

"Nothing on earth can stop Mississippi but ourselves," he added.

Owen Cooper, chairman of the Mississippi Commission on Hospital Care, briefly traced Mississippi's progress in the medical field since the inception of the Hill-Burton Act.

Mississippi has spent a total of $53,000,000 on 83 hospitals constructed under this program, which he termed "a great investment in our state." In addition, a total of 51 different health facilities have been constructed at a cost of $4,500,000, he said.

Dr. R. B. Caldwell of Baldwyn, president of the Mississippi State Board of Health, termed the late Dr. Underwood as "the greatest health officer of all times and the greatest Mississippian who ever lived."

"Our actions will continue to be based on the concept that Mississippians cannot realize any greater degree of general prosperity and happiness than their state of health will permit," said Dr. Gray.

"This building and its dedication are evidence that the leadership of Mississippi and all her citizens attest to this fact," he concluded.

Golden scissors for cutting the ribbon which officially opened the new $1,431,000 two-story structure were presented by Dr. Guy T. Vise of Meridian, president of the Mississippi State Medical Association.

Honor guests for the occasion included Mrs. Felix J. Underwood, Mrs. Felix J. Underwood, Jr., Mrs. O. L. Snipes, a sister of the late Dr. Underwood, and Zach Underwood, a brother, plus members of the State Building Commission and members of the Mississippi Commission on Hospital Care. Invocation for the dedication ceremony was given by Rev. Roy S. Hulan, pastor of the First Christian Church.

REMARKS BY OWEN COOPER AT THE DEDICATION OF THE FELIX J. UNDERWOOD BUILDING, APRIL 17, 1959

It is a pleasure and an honor to participate in this occasion on behalf of the Mississippi Commission on Hospital Care. This event is of particular significance to the Commission.

In the first place, the dedication of this building is significant because it is part of a great state program for the development of hospital and health facilities in Mississippi. The Mississippi Commission on Hospital Care is charged with the responsibility of administering the Hill-Burton hospital and health facility program in the state. Since the creation of the Commission in 1946, a total of 64 hospitals have been completed, 8 are now under construction, and 11 are being designed, with funds allocated for their construction. This is a total of 83 hospitals which provide 4500 new modern beds for use in Mississippi. The total cost of this program in Mississippi, including local, state and federal funds, is $56,000,000.

In addition to the hospitals, 51 health centers have either been completed, put under construction, or are in the design stage. These facilities represent a total investment of $4,500,000. The total cost of health facilities in Mississippi erected under the direction of the Mississippi Commission on Hospital Care is $60,500,000. This entire amount having been spent in a little more than a decade represents one of the most significant advances in hospital and health facilities ever recorded by any state in a similar period of time.

The facility that we dedicate here today is a part of this great state program and gives added testimony to the wisdom of the state participating financially in this worthwhile program.

This occasion is also significant because this building is a part of a great department of Mississippi. Through the years the State Department of Public Health has made a remarkable and outstanding contribution to the development of the state. In a quiet, unassuming manner it has worked tirelessly in eradicating diseases and strengthening the bodies of Mississippians. There is no way to measure the added progress given the state by the added vitality and energy resulting from the work of Mississippi's Public Health Department.

The elimination of many communicable diseases and the substantial control of others speaks in eloquent testimony of the effective work of this great department. There is no department in the state that has contributed more to the welfare of the public than has the State Department of Public Health.

This occasion is also significant because it commemorates in brick and stone the memory of a great Mississippian. Someone has said that every institution is but the lengthened shadow of a great man. Truly this can be said of the State Department of Public Health, and the great man is none other than the late Felix J. Underwood — the man who saved a million lives.

In addition to his effective service as state health officer, Dr. Underwood among his other activities served as a member of the State Commission on Hospital Care from its creation until his death. In that capacity he gave of his characteristic unselfish service and devotion to the promotion of health facilities for the benefit of Mississippians.

Long after this building has been replaced and the other facilities in this state which have been erected with the cooperation of Dr. Underwood have crumbled to dust, he will be remembered as a great Mississippian, dedicated to improving the welfare of its people.

Again may I say, on behalf of the Mississippi Commission on Hospital Care, that we consider it an honor to have been able to participate in the erection of this building and in the significant occasion which marks its dedication to the memory of a great and distinguished man.

CONGRATULATIONS

We offer cordial congratulations to Dr. and Mrs. L. L. Minor on celebrating their fiftieth wedding anniversary on April 12. Dr. Jim Hill and his son, Dr. Stanley Hill, president-elect of the Mississippi State Medical Association, were among those who attended the celebration.

Dr. and Mrs. Minor are people of culture and refinement and fine influence. Dr. Minor is able in his profession and has been very active in organized medicine.

DR. BASS LUNCHEON SPEAKER

Members of the Fifty-Year Club have a treat in store for their meeting May 12 at the State Medical meeting at the Buena Vista Hotel. They will be honored by having as the guest speaker a native of Mississippi, Dr. C. C. Bass. His home in his early days was in Lumberton. The Bass family is known across the nation for their pecan developments. Dr. Elizabeth was one of the outstanding teachers in Tulane for many years, and in laboratory technique she is unsurpassed. The work of Dr. Bass in the field of malaria, hookworm, typhoid, and medicine in general is monumental. He is able to work out most complicated problems in research and then apply the most effective means in a simple understandable form.

As dean of Tulane for many years he was outstanding. He knew students and how to turn out good doctors. His greatness has also consisted of a kind understanding, and the simple application of profound truths.

ANNOUNCEMENTS

Dr. Robert H. Barnes, who has been a fellow in surgery in the Mayo Foundation in Rochester, Minnesota, has left that city and will be located in Natchez, Mississippi.

Dr. Harvey F. Garrison, Dr. Harvey F. Garrison, Jr., Dr. Byron Alexander, and Dr. Howard H. Nichols announce the association of Dr. Joseph B. Miller, Jr., in the practice of pediatrics at the Children's Clinic, 529 North State Street, Jackson, Mississippi.

Fenwick Chappell, M.D., announces the removal of his office to Suite 210-A, 899 Madison Avenue, Memphis, Tennessee. Practice limited to general surgery.

ST. LUKE'S OFFERS COURSE

The Woman's Hospital Division of St. Luke's Hospital in New York City offers a one-week course, October 8-14, in "The Conduct of Labor and Delivery." This is for general practitioners and thirty hours Category I credit is allowed by the American Academy of General Practice.

The course consists of lectures, demonstrations, work in the prenatal and postpartum clinics and assistance in the delivery room.

Write to Mr. Carl P. Wright, Jr., director, Woman's Hospital, 141 West 109th Std., New York

DEATHS

DR. GEORGE STREET

Dr. George M. Street, founder of Street Clinic, who practiced medicine for more than 40 years in Vicksburg, died February 24.

The 72-year-old physician and surgeon came to Vicksburg in 1906 to join his brother, the late Dr. D. P. Street, in establishing the sanitarium, the first privately owned hospital in the state. The clinic was consolidated in 1957 with Mercy Hospital.

Dr. Street was president of the Vicksburg Country Club, a director of the First National Bank, and a vestryman at Holy Trinity Episcopal Church.

Dr. Street was a graduate of the Columbia University Medical School and was a native of Corinth.

Survivors include two daughters, Mrs. Lucian Ferris of Vicksburg and Mrs. Bres Eustis of New Orleans, La.

DR. S. L. STEPHENSON

Services for Dr. Samuel Logan Stephenson, Sr., retired Corinth physician and father of a Jackson physician were held in Corinth's First Methodist Church on April 7.

He died in a Memphis hospital.

Dr. Stephenson, 78, was a native of Hopkinsville, Ky., and a graduate of the University of Tennessee. He was a veteran of the Spanish-American War and World War I. He served with the First Imperial Light Horse British Regiment in the Boar War.

He retired in 1941 and was a member of the Methodist Church.

Survivors include his wife; two sons, Dr. Sam L. Stephenson, Jr., of Jackson and Lindsey H. Stephenson of Corinth; a daughter, Mrs. James Stephenson Hix of Corinth, and a grandson.

DR. A. J. GAY

Dr. A J. Gay, 70, retired medical doctor who has resided on the Coast for about seven years but was a native of Roanoke, Ala., died at the Ochsner's Foundation Hospital at New Orleans, March 12.

Dr. Gay was residing at 245 W. Beach, Long Beach, but was the owner of the Gay Apartments and Biloxi Apartments at Biloxi and had previously lived at Biloxi.

A member of the Biloxi Rotary since 1953, and the First Methodist Church, Biloxi, Dr. Gay was also a Mason and a Shriner. He was a former hospital executive and a member of Phi Chi fraternity. He came to Biloxi in July 1952.

He is survived by his wife, Zula, of Long Beach, a son, Dr. A. J. Gay, Jr., of Boston, Mass., and a daughter, Mrs. Warren Riley of Chattanooga, Tenn.

DR. ROBERT LEM PRICE

Services for Dr. Robert Lem Price, retired Jackson physician, were held March 31.

He died at his home at 745 North President St., after a brief illness.

Dr. Price, 90, was a native of the Mountain Creek community in Rankin County and was a pioneer Jackson physician. He was one of the first osteopaths in the state and for many years had offices in the Lamar Life Building in Jackson.

Dr. Price was a graduate of Gillsburg Collegiate Institute and the Louisville School of Medical Surgery. He began his practice in the Delta and moved to Jackson in 1901. He had been retired since 1952.

Dr. Price was' a member of the First Baptist Church in Jackson, a former member of the Jackson Rotary Club, a Mason and Shriner.

Survivors include several nieces and nephews, Mrs. Ann Childress, Miss Dorothy Price and Miss Ruth Martin, all of Jackson, Mrs. J. D. Martin of Jackson, Mrs. Lilly Blake of Pocahontas, Mrs. Lola Bethany of Florence, Mrs. Mollie Yates of Gulfport, Kenneth G. Price of McComb, Ralph L. Price of Birmingham, Aaron Harrison of Brandon, and Willis Harrison of Florence.

RESOLUTION

Dr. Robert Blythe Cunningham

Whereas, the Great Physician in His infinite wisdom saw fit to call from our midst on December 13, 1958, a charter member of the staff of the Northeast Mississippi Hospital, an active and long standing member of the Northeast Mississippi Medical Society, DR. ROBERT BLYTHE CUNNINGHAM, able and outstanding in medicine and surgery, a native of Booneville and a son of a Booneville physician; and

Whereas, Dr. Cunningham was faithful in attending staff meetings, medical meetings, in reporting interesting cases and participating in all discussions of the group; and

Whereas, his devotion to his profession was inimitable, his long membership in his local and state medical societies and the American College of Surgeons evinced his safe professional judgment and wisdom; and

Whereas, his fine personality, his ability to make and to hold friends, his personal devotion to his patients, his high standard of ethics, his unquestioned medical integrity, are etched imperishably upon our memory, and we acknowledge our indebtedness to him and our responsibility to preserve this legacy in our practice and professional relationships;

Be it therefore resolved, that we acknowledge our great loss in friendship, in warmth of personality, in unfailing inspiration; and be it further

Resolved, that we offer our deepest sympathy to his devoted and helpful wife, Evelyn Cunningham, and to his son, Jack Cunningham, and our love and sympathy to his associate of many years, Dr. W. H. Sutherland; and we request that a copy of this resolution be spread on the minutes of both the Northeast Mississippi Hospital and Northeast Mississippi Medical Society, a copy be sent to Mrs. Cunningham, and a copy be sent to Dr. W. H. Sutherland and a copy sent to the *Mississippi Doctor* for publication.

Respectfully submitted,
W. H. Anderson, M. D.
W. W. Strange, M. D.
J. M. Ford, M. D.

NORTHEAST MISSISSIPPI MEDICAL SOCIETY

Memorial for Dr. Felix J. Underwood

It is with deepest regret over the passing of a beloved friend and colleague and long-time active member of our society that we note the death of Doctor Felix Joel Underwood in January, 1959. Doctor Underwood was born on November 21, 1882, in Nettleton, Mississippi, the son of Marion Milton Underwood and Amanda Capitola Battle. He was educated in Mississippi and received his degree, Doctor of Medicine, at the University of Tennessee in 1908. He married Sarah Beatrice Tapscott on November 21, 1904. They had two children, Virginia Christine, deceased, and Felix Joel Underwood, Jr. Dr. Underwood was a Presbyterian.

Doctor Underwood began his practice of medicine in Nettleton, Mississippi, and was part-time health officer of Monroe County until 1918. From 1918 he was full-time director of the Monroe County Health Department until he became executive director of the State Board of Health, which position he held until his resignation on July 1, 1958.

Aside from Doctor Underwood's intense medical interest in the control of disease, he had a deep personal hatred of uncontrolled disease. His mother died of postpartum infection, and his only daughter was a victim of diphtheria. If ever there was a medical crusader, the role fitted Doctor Underwood. Through his personal efforts, he stimulated preventive measures in the control of preventable diseases which were rampant in Mississippi at the time he entered the practice of medicine.

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Doctor Underwood had not only an intense interest in public health, but also the God-given ability to stimulate a similar interest in others. He was a propagandist and teacher of public health.

Through the campaigns which he originated and promoted over a fifty-year period, he obtained the cooperation of the entire medical profession, the Legislature, and the general public, with the result that at the end of this period many diseases were totally eradicated, others were under practical control, and Mississippi was given recognition as having the most successful health department of any state in the Union. Doctor Underwood was presented the Lasker Award as the outstanding health officer of the world.

Doctor Underwood was president of the Mississippi State Medical Association in 1919, and at various intervals, member and chairman of the Council of the Mississippi State Medical Association and delegate to the American Medical Association from the State Medical Association. He was also president of the Southern Medical Association and the National Health Officers Association, as well as consulting director of the Rockefeller Foundation and the Commonwealth Foundation.

Two large, closely printed pages are needed even to list the major state, national, and international honors that came to Doctor Underwood. He was awarded almost every honor that a public health officer could possibly receive.

Doctor Underwood was the personal friend of many of the members of our local society. He always maintained his membership in the Northeast Mississippi Medical Society and continued to serve as our secretary even after moving to Jackson until the burden of his office forced him to resign the secretaryship. Not only is Doctor Underwood the best known physician that Mississippi ever produced, but he also has been nationally renowned as the man who saved a million lives. For many years to come he will live on in the memories of the people of Mississippi, but most especially will he be remembered by the members of the Northeast Mississippi Medical Society.

Be it resolved the Northeast Mississippi Medical Society extends to the family of Doctor Underwood our love and deepest sympathy in their great loss.

Dr. S. Jay McDuffie
Dr. R. B. Caldwell
Dr. M. Q. Ewing

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The Mississippi Doctor

Official Organ of the

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Mississippi State Medical Association

W. H. Anderson, M. D., Editor-in-Chief

Mildred P. Anderson, Assistant Editor

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